AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

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NOVEMBER 15, 1941

Viburnum Cassinoides

Annuals for Neighborhood Nurserymen
Landscape Planning and Planting
Texas Nurserymen's Short Course

AMERICAN NURSERYMAN

F. R. KILNER, Editor

Editorial

FEDERAL GOVERNMENT TO PROMOTE GARDENS.

Having been engaged for some months in formulating its program, the garden committee of the United States Department of Agriculture last week issued its first release as an announcement of the general objectives.

Emphasis is placed on the promotion of farm gardens, especially home fruit gardens. Accompanying this is to be an expansion of school and community gardens. The county agents are already active in preparatory steps on this portion of the program.

In urban centers, emphasis is to be placed on the improvement of home and landscape plantings of ornamental character, to counteract suggestions from various sources for "emergency," "defense" or "war" gardens. The department garden committee warns that "there is no emergency in sight that would warrant intensive city home vegetable garden campaigns" and offered as an alternative for city population "improving ornamental and landscape plantings."

This is a program which the trade can heartily endorse and promote. The American Association of Nurserymen has already laid plans to do so. The executive committee has submitted to the board of governors for approval a proposal to raise $3,000 by contributions from members, quite aside from association dues, in order to maintain close contact with the department officials administering the program and at the same time to develop a program of the association to tie in with the federal activities.

THE BUYER'S VIEWPOINT.

We have all heard of the salesman who talked so much about himself that he failed to book the customer's order.

He has his printed counterpart in much advertising, particularly handsome mailing pieces that are seasonally sent to prospects. They are not confined to any line of business and occasionally include the output of nurserymen and landscape firms.

Naturally one writes most easily about himself and his business, the things he knows best. But those things which concern you and the operation of your business are not of the same importance and interest to possible customers.

This common failing in writing advertising copy can be overcome easily if one puts himself out of mind and thinks about the prospect, attempting to visualize his needs and how to interest him in them. What do you offer that a prospect might most readily want? How put the matter before him so that he will ask for it?

If you can visualize the prospect in your community so clearly that you, in writing copy, adopt his viewpoint toward you, the approach will be simplified. If you haven't made this effort, try it the next time you get up a mailing piece or other advertising copy.

The Mirror of the Trade

CARRYING ON.

One who receives regularly the issues of the horticultural periodicals from England cannot but admire the way they carry on, much as formerly, in spite of the shortage of paper, diminished advertising and other difficulties, not to mention the damage by bombs. Charles H. Curtis, editor of the Gardeners' Chronicle, everywhere regarded with high esteem, recently writing to a fellow Kewite in this country, Ernest Hemming, reported: "Our offices at John street, London, were blitzed, but not too badly; they are tidied up now, but we don't work there. The printing works were razed to the ground, but even before that things became so uncomfortable there that I had to move the printing to Reading and come to live at Pangbourne, just beyond Reading, where we have been for over a year. We keep the Gardeners' Chronicle going, and I manage to run the Orchid Review, but things are not easy, although they might be a good deal worse."

In commenting on the food supply, he indicated the importance of the vegetable garden, writing: "There is no real shortage of food, but I find the small butter ration insufficient for my taste, and we have to deal very economically with our sugar. I had a nice crop of apples at Brentford and go there about once a fortnight and bring back a bag full. Two allotments have provided supplies of broad, runner and dwarf beans, carrots, beets, cabbage and cauliflower. Onions were very small and potatoes not a good crop. Parsnips, leeks and kale look well for the winter."

CEILING ON OLD BURLAP?

Growing concern is felt at Washington, D. C., over the rising trend in prices of secondhand burlap bags, and belief is rapidly gaining ground within the Office of Price Administration that a ceiling may have to be imposed on old bags in order to speed up the turnover in that market.

With the major burlap problem—that of adjusting the domestic burlap ceiling to the unrestricted Calcutta price structure—still far from a satisfactory solution, a meeting November 8 between O. P. A. officials and representatives of the burlap trade dealt primarily with questions of substitution and conservation.

Scarcity in materials which could be used as substitutes, asnaburgs and heavy paper bags, apparently makes it imperative to stress conservation measures more than heretofore. There is a good deal of scepticism, however, that much can be accomplished along these lines as long as no steps are being taken to break the hoarding of secondhand bags in which emptiers as well as dealers are said to be involved.

Since old bags apparently are being held back primarily in anticipation of higher prices, it is believed that removal of this market factor is essential and that this can be accomplished only by the imposition of a ceiling on secondhand bags.

Other conservation measures under discussion are steps to educate farmers to speed return of empty bags, but in this respect, too, no startling results are expected in informed quarters.

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Your salesman is welcome—is invited—is paid to come!

He is well introduced—in good company—vouched for.

He calls when the prospect is not busy—is given full attention.

He reaches nearly 4,500 prospects—so is sure to make enough sales to please you.

That is, if your salesman is an advertisement in the American Nurseryman.

Enclosed check to cover our invoice and one more insertion of our advertisement. We have been very well pleased with results from our ads.—Heasley's Nurseries, Butler, Pa., October 19, 1941.

Annuals for Neighborhood Nurserymen

By C. W. Wood

Affording a quick turnover and an easy supplement to perennial plant sales, annuals are a profitable addition to the stock of a retail nurseryman selling locally. By growing the less common varieties described here, he may avoid the competition of roadside stands, hardware stores and the like.

Comments in several letters the past summer and a specific request in a recent one for a list of unusual annuals for handling in a neighborhood nursery prompted this brief discussion of the subject. First of all, though, let us examine a few reasons for the addition of annuals to the usual line of hardy material grown in nurseries.

The first reason that comes to mind is, because it is a selfish one, perhaps also the best one: Being of annual duration, that class of material has a large market every spring. When one sells a perennial plant to a gardener, that is often the last sale in that item to that gardener and, more often than not, to a lot of his neighbors who receive pieces of it by the friendly route. On the other hand, an annual, by its very nature, ceases to exist as an entity with the coming of winter and, unless the gardener has facilities for the handling of annuals sufficiently early to insure large plants when the bedding season opens, the seeds produced by his purchases are of no value to him. Another point favorable to the commercial grower is the short time which annuals are in the nursery, meaning a quick turnover in the time and money invested in their culture. There are other reasons why annuals should receive the attention of the neighborhood grower, but enough has been said, no doubt, to bring them to the favorable attention of some who are now letting these profits go elsewhere. The next thing to be considered is the list of plants adapted to that purpose, though the ordinary items in the bedding plant trade, including ageratum, antirrhinum, larkspur, marigold, lobelia, pansy, petunia, salvia, verbena and zinnia, need not occupy our attention at this time. Discussion will cover some less common annuals.

Asperula Orientalis.

Asperula orientalis, which is the A. azurea-setosa of seed lists, has much to recommend it as a bedding plant. It is an accommodating plant, doing well in sun or shade and in rich soil or poor. It is also floriferous, producing its heads of gray-blue flowers on foot-tall or lower stems for about six weeks commencing in late May or early June, according to the time the seeds are started into growth. When this plant is grown at all, the seeds are usually planted directly where wanted and as early in spring as the gardener can get on the soil. Few gardeners think of these matters at that time and, as a consequence, few of the plants are grown. In the nursery the seeds may be sown early in flats and put in a coldframe; the seedlings are transplanted as soon as large enough to handle and later shifted to larger pots. Early seeding is necessary because it seems to take cool weather to germinate the seeds and early transplanting should be done because the plants resent disturbance when large.

Brachycome.

The Swan River daisy, in my opinion, is not half appreciated. It is said to be of rather short duration in sections where the summers are extremely hot, which may account for the general lack of interest in the plant. Here in north Michigan it blooms practically all summer, if seeds are not allowed to form, not sparingly but so abundantly as quite to hide the plants. Although the usual recommendation, and perhaps practice, too, is to sow the seeds by the middle of March, I find that too early for this climate. Here we try to get the seeds going by the middle of April and pot the seedlings up in 2½-inch pots as soon as they are large enough to handle. Stopped once when four or five inches tall, they make bushy plants, for so small pots, showing much color by the time they are hardened off and ready for the bedding season. Several named kinds, including the Star varieties in red, white or blue, are available and are often preferred over a mixture. A new one, Summer Beauty, lavender-blue with a narrow zone of white at the base of the petals and a yellow-specked dark center, was a good seller here the past spring.

Browallia.

Experience and observation tell me that browallia could be made one of the neighborhood grower's most profitable items. A number of factors lead to that conclusion. First is ease of culture, something that is of foremost importance in the eyes of gardeners. Although the plants are only half-hardy, they can stand much abuse after they become established, doing well in soil too poor for most showy plants. They are also amenable to culture in pots, where they may be had in flower throughout the year by making plantings at 2-month intervals. The plant has too many angles to be covered completely in these brief notes, but the handling of browallias for bedding plant sales, as it is practiced here, will receive our attention. The first lot is started about the middle of March, the seedlings being transplanted into 3-inch pots as soon as they produce their first true leaves. Hardened off gradually through late April and early May, they are ready to sell from mid-May into June. A portion is stopped several times to retard blooming and make bushier plants for late sales. A smaller lot is started about May 1. These plants are handled the same way and are intended to catch the tardy gardeners who never know what they want until the season is well advanced. Good strains of all kinds listed will prove satisfactory. Sapphire is an especially good bedder where blue is wanted, and a new strain listed

as B. demissa (which is ambiguous, for demissa is the correct name of the species known to seedsmen as B. elata) is a splendid selection for the lover of white.

Grammanthes.

I hesitate to name this member of the crassula family because seeds of grammanthes are hard to get since the war in Europe cut us off from that continent. But it is included with the hope that a just peace will soon open free intercourse again. It is a monotypic genus, the one species being known as Grammanthes dichotoma. Although it is, according to the books, a variable species, seeds that I have had have produced quite uniformly a 3-inch to 4-inch plant with bright orange flowers over succulent foliage. It is of most value for hot dry spots in the rockery or other sunny spots where little else will grow. Handle this like other half-hardy annuals, sowing the seeds in April in the northern states.

Calceolaria.

I am so enthusiastic about Calceolaria mexicana as a bedding plant for shade that I shall probably have trouble restraining myself. I am equally enthusiastic about it as a money-maker for neighborhood growers as soon as seeds become more generally available. That opinion is based on the fact that it has been one of the best selling items in this nursery during the past two or three years, and we have more orders booked on it for next spring than for all other annuals combined. After being so enthusiastic in its praise, I hope it does as well in other sections as it has here.

It is not to be confused with the florists' calceolarias, for it has none of the characters of those delicate denizens of hothouses, except that it has the pouchlike flowers of the genus. In this case the pouches are much smaller than those of the hybrids and bright yellow in color. They are produced within two months of the sowing of the seeds, when the plants are six inches or less in height. They keep right on blooming after being bedded out and keep up the performance until cut down by frost, when they may be eighteen inches tall. During the summer months, the flowers are produced so freely as to make a solid mass of color. All that for no trouble at all, except to keep the plants watered during dry periods. Incidentally, they selfsow here, which is unusual for a tropical plant in latitude 45, but they do not then commence to bloom until late summer. One caution is necessary, however; the foliage must not be watered when the sun shines, as this spots the leaves. Considered from every angle, Calceolaria mexicana is an excellent bedding plant and, in my estimation, one that will go far when it becomes better known.

Here the seeds are planted about April 1 and, when the seedlings are large enough to handle, they are transplanted to 3-inch pots, with a compost of equal parts of rotted sod and garden soil. If the weather becomes hot before the pots are put in frames to harden off the plants, they are shaded by a lath screen; otherwise, one is likely to have burned foliage. There is nothing delicate about the plants at any stage of growth, even tiny seedlings standing a lot of abuse.

Gilia.

Gilia contains several species of more than ordinary value for bedding purposes. I find one, the plant known to gardeners and seedsmen as Leptosiphon hybridus (Gilia micrantha of botanists), quite attractive to buyers in late May, when early April sowings of seeds are coming into bloom in their myriad colors, ranging the scale from purple and violet to red, rose, pink, yellow, cream and white. Because the plants require little soil or moisture to carry them along until bedding-out time, I grow them in thumb pots and put them in frames as soon as possible to keep them from becoming leggy under glass. Even if one has to take a low price for the small plants, the quick turnover and small amount of space occupied still allow for profit. Gilia dianthoides, which is Fenzlia dianthiflora to some folks, may be handled in the same way. Compared with the first, it is a more compact grower, the flowers are larger and quite uniformly a pretty shade of rosy purple (sometimes white, and I once found a strain, alba, that was nearly 100 per cent white) and the flowering season, in my experience, is somewhat shorter. Gilia contains several other good annuals, but the seeds are usually hard to find. If you find bedding plants are as profitable as I suspect they may be, it will pay you to search the lists of western collectors for others to try.

Lopezia.

Lopezias are of the evening primrose family, most of them being tender perennials or shrubs for greenhouse culture. At least one annual species, L. coronata, has long been in cultivation in southern California and has now reached eastern seedsmen's lists. Planted in early April, kept shifted to or planted directly in 3-inch pots of good soil, the plants will be in bloom by early June, when they are a foot or less in height; put in the open (sun or part shade), they will keep producing their deep rose butterflies until cut down by frost, when the plants may be close to three feet tall. In the meantime they are further adorned with small, persistent, red fruits, which are almost as decorative as the flowers. L. coronata is a quite accommodating plant, doing well in poor dry soil, though better where it has the advantages of good cultivation.

Molucella.

Last spring the publicity given Irish bells in several seed catalogues gave the grower of bedding plants an opportunity to cash in on this unusual item. Let us hope that the impetus given the plant will carry it along for years to come. A colored cut of the plant backed up with well grown stock in 3-inch pots at bedding-out time should make sales. The name, Irish bells, is misleading, for the plant, Molucella lævis, comes from the East Indies, Molucca, to be exact. It is of easy culture in a sunny border, where it will grow two feet or more tall and bear its small flowers in curious shell-like (hence the old name, shellflower) calyxes.

I had hoped, when these notes were started, to include many more kinds in this article, but our space is now exhausted and several are left untouched. Perhaps later, if response from this seems to justify the use of more space, others may be mentioned. In any case, the subject deserves the attention of all neighborhood growers.

Landscape Planning and Planting

By Joseph P. Porter

VIII. FRONT YARDS.

Their Planting. Part 4.

Eighth of a series of monthly articles on the application of landscape architecture to the property of Mr. Average Citizen, by the professor of landscape design in the department of horticulture at Cornell University, continues discussion of the treatment of the public unit area, or front yard, as to shrub planting for various purposes.

Proper shrub plantings located at the entrances, corners and angles of the residence may be sufficient completely to landscape the residence. But there are two more possibilities that should be considered by the designer, the satisfaction of which may add materially to the beauty of the house development.

It has been stated previously that the best effect of house planting allows the architecture to be seen extending to the lawn and that solid masses of plants that cover the entire foundation are invariably bad design. If we eliminate for the moment those houses of bad architectural design whose high foundations must be treated in some way, we still find occasional need for more plants than would be used to develop the corners and doorway. This is especially true of long, low houses with strong dominant horizontal lines. It is true for types of houses that show no real foundation walls, as well as for those whose first floor is located at an elevation of three or even four feet above the ground. The need of more plants along the foundation is determined by the length of the unbroken facade, the prominence of horizontal effect in the house design, the placement of windows in basement and first floor and, to some extent, the massiveness and texture of the material of which the house is built. In my opinion, no rules can yet be formulated that will tell us accurately when and how much material should be used for these extra foundation plantings. In many cases, a single plant is sufficient; in other situations a whole group of plants will look best.

These plants are in the nature of foils (see illustration 25). Their function is to interrupt the surface and line of the material against which they are placed and to call attention to the attractiveness of that material through their contrast of form and color. This does not mean that we should attempt to select plants that will intensify the contrast. Our great difficulty will be to secure those that sufficiently harmonize with the situation. Any living plant set against the artificiality of a residence is by its very life and nature already in strong contrast with both the form and pattern of the building. The designer's task is, rather, the discovery of those types of plants that harmonize best with the architecture and the subsequent development of a composition that will blend with the situation. For the most part these plants will be of the neutral type, those possessing medium to fine-textured foliage in the more normal or dark shades of green. As a rule, the less conspicuous the show of flower the better, although flower effect in the more normal hues of white, pale yellow and pink is rarely objectional. Vivid colors or strong diversity of color are bad.

A single plant used as a foil should be broader than it is tall to reflect the horizontal of lawn and house. The vertical form is always out of place for this purpose. So, also, a group of plants functioning as a foil should express the horizontal effect over height, although, when two or more plants are used, one of them may well be somewhat taller than its companions. The taller plant should be set toward one end of the group, but never at the actual end except when only two plants are used, and never in the center of a group.

Plants used as foils should be placed so that the architecture which shows is interrupted to form sections in the proportional relationship of one-third to two-thirds or one-fifth to four-fifths. The exact placement may be determined in part by windows, but since foil plants are usually low-growing in habit, good comparative proportions of architecture can commonly be obtained. The success of the whole effect is often due to this relationship. Perhaps it is needless to say that a foil plant should never divide the house wall into two equal parts. I believe that foil plants in their position along the foundation should always be located nearest to the larger adjacent shrub groups.

Diminutive or very slow-growing vines may sometimes be used either by themselves as foils or in conjunction with a shrub type set at their base. In my section of the country Euonymus Fortunei radicans and Taxus cuspidata or repandens can be used for such a combination and are

Illustration 25.—The plants in the center function as a foil planting. A solid mass of vines or shrubs along this wall would destroy the dignity and beauty of the situation.

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quite effective. Shrubs, like pyracantha, Forsythia suspensa and Taxus canadensis, may be pleached or trained against the wall in place of the vine. At the present time the list of plants that can be treated in this manner is pitifully small. My latest discovery is Magnolia grandiflora used this way at Washington, D. C. I should like to see someone try franklinia and some of our fine

Illustration 26.—No wall or chimney surface is improved by complete vine coverage.

cotoneasters. Investigational work might reveal many possibilities. In connection with this idea one might think of the espalier fruit trees. Under certain conditions one of these might be a happy selection, but if such a situation exists I have yet to see it. Frankly, while I am most enthusiastic regarding the use of espalier fruits, I do not believe that their place is in the public area or front yard development. My reaction against their use in this part of the property is based upon their great decorativeness due to the severe architecturalization of the plant's form and the fact that fruits and fruit trees more properly belong in the private section of the home grounds. Any shrub or vine used as a foil should in most cases still appear informal or natural even though it has been artificially forced to assume a new form.

Many of you will recall a fad that some years ago lightly touched the faces of the fair sex. Little black pieces of court plaster were ingeniously applied to chin or cheek. These were called beauty spots, although in themselves they were anything but beautiful. They were used as foils to bring out by contrast and to call attention to the perfection of the skin. So, also, vines and shrubs may be used effectively against walls or houses. The plant as a foil has much value.

The use of vines upon houses gives the designer another excellent opportunity. The commonest purpose back of the use of vines is to soften architectural lines, both vertical and horizontal, that may appear too harsh or prominent. The house corners, angles, downspouts, chimneys, pilasters, columns, doorframes, the corners of bay windows, as well as porches, and the eaves themselves, all may afford opportunity for the use of vines. Then, there are many situations where vines can be planted to grow upon the wall itself or upon some framework or trellage fastened against the wall to alter the color and texture of overlarge surfaces. Many otherwise ugly or ill-proportioned blank walls could be made more than just interesting if the use of trellage and good vines were popularized. The nurseryman is the one to suggest such an improvement. Vines upon flat surfaces, that cover buildings or just chimneys, are often types that overgrow the situation, covering it completely with a mat of green. Anything smothered in vines loses its best effect (see illustration 26). Rarely should they hide more than one-third of a surface or an object. This means thoughtful selection of the species and possibly some maintenance. Vines as nature's lacework function splendidly both as structural and decorative material. They are particularly useful to replace or supplement shrubbery where space for planting is limited. They may afford both shade and privacy for the old-fashioned front or side porch (see illustration 29). Low-growing types should be employed more generally to hide or decorate ugly foundation walls (see illustration 27). Adequate and proper use of vines is undoubtedly one of the designer's and nurseryman's most neglected opportunities. While out taking photographs for this article I saw hundreds of places where vines should have been used, a dozen or two where they had been employed and only five or six examples of really good usage. Why have we neglected the vines?

Several factors may be responsible for our slighting this splendid group of useful plants. The small number that can be sold on any one job may be a reason. Yet three vines per job, times all the jobs done by a firm, would produce a profit figure worth adding to our returns. The fact that many vines have not succeeded too well because of their placement in the poor soil and under the bad growing conditions found next to the foundation walls of buildings must have discouraged their use. But soil conditions can easily be corrected, and most vines would then be satisfactory. It is more likely that the versatility of the vine and its great range of possible effects are not generally known. This, together with a somewhat limited intimate knowledge of the many available species, may constitute the main reason. In one of our well

Illustration 27.—Hedera Helix transforms the ugly foundation wall. A single small shrub at "B" and two groups of plants at "A" and "C" would improve this planting.

landscaped eastern cities of over 7,000 homes there is not a single example of nine species of hardy good vines and not over one or two plants of six additional common species. I believe that a checkup in most localities would reveal this same situation.

Not all plantsmen have recognized the wide variation of growth habit and form that characterizes our cultivated lianas. Their method of climbing seems to be well known, but the character of stem branching has received little attention. A vine is a vine regardless as to whether the plant clings flat and close to a surface, merely altering its texture and color like parthenocissus or Hedera Helix, or whether it builds out from the wall, forming billows of foliage that afford strong contrasts of light and shade and that may actually change the form effect of the wall (see illustration 28). Campsis radicans, celastrus, Euonymus Fortunei vegetus, Hydrangea petiolaris, Vitis Coignetiæ and wisteria are examples of species that will accomplish this result. This type of growth is particularly good for house corners, recessed angles, leader downspouts and chimneys. The designer might also consider the variation of foliage color and the wide range of textures. To me, texture in vines becomes an all-important consideration, for these plants are usually placed in intimate relationship to the material of the architecture and should, therefore, be selected to provide the closest possible harmony with this material. As a rule, the fine-textured vines are noticeably superior to those of coarse texture for use upon buildings (see illustration 29). The one exception, or perhaps the limit of coarse texture, is Hydrangea petiolaris. This plant deserves more popularity and wider usage, but its use should probably be restricted to houses of stone, brick, stucco and steel.

Illustration 28.—The texture, mass and billowy effect of euonymus fit this stone building.

The ugly or too high foundation wall deserves some special comment, since it is one of our pet problems. Difficult enough in itself, this is frequently further complicated in many of our towns and cities because the house is located within a few feet of the public sidewalk. To complete our headache the whole situation is then blanketed by the dense shade of elms, maples or oaks. Now I ask you, what is a nurseryman to do when called upon to landscape such a property? How much I would enjoy sitting at a round-table discussion of this problem! I have much to learn, but I shall pass on to you a few ideas.

Do not be afraid to step out of your restricted field as a nurseryman to make a few suggestions or even to do a little extra work. The carpenter will not object if you induce the homeowner to build some trellage or lattice; neither will either the homeowner or the painter object if you recommend that the first thing to be done with many an ugly foundation wall is to give it a complete coat of appropriate and harmonizing paint. Indeed, this may be all that is needed for the solution of our problem.

The color used must be selected to go with the house. As a general rule, it should be unobtrusive. Sometimes gray, olive or dull browns may be used, but dull brown-greens are usually most satisfactory. I have seen both black and white used successfully, but their selection should be the result of careful study. It is best when the foundation color harmonizes with both the house and the lawn and shrubs. If this does not help conditions sufficiently so that you may proceed with a normal house planting and are tempted to throw in the outmoded chin whiskers of common shrubs or evergreens, then pause to consider the following possibilities:

(a) Reduce the apparent height of the wall by a bed of good ground cover material preferably of a plant that has some height, such as Cotoneaster horizontalis, Pachysandra terminalis, erica or even varieties of ferns (see illustration 31). Any material under fifteen or even eighteen inches in height will act more as a lifting of the horizontal lawn surface than as a bank of shrubs.

(b) Cover a portion of the wall surface with a good group of plants set as a foil (see illustration 25). These need not reach much, if any, above the top of the foundation.

(c) Be sure that house corner and doorway plantings are tall enough

Illustration 29.—Texture is important. Compare these two effects for value in front dooryard planting.

to reach well above the foundation line.

(d) Avoid the use of columnar or spire-like plants unless as a both tall and large mass (viz., several specimens of Thuja occidentalis of varying heights arranged to form a single clump) at the corners.

(e) Cover part or all of the wall with some close-clinging vine, such as Ficus repens, Hedera Helix or Euonymus Fortunei radicans (see illustration 27).

Illustration 30.—A foundation planting of clipped hedge is more appropriate than informal shrubs where a solid planting seems to be needed.

(f) Pleached forsythia and taxus can be used successfully in some situations.

(g) As a last resort, a perfectly clipped hedge of Berberis Thunbergii, taxus, or any other good hedge plant can be used (see illustration 30). This is much better than the informal shrub planting so generally practiced. The clipped hedge constitutes a second wall of green and thus becomes a unified part of the architecture. Such a hedge should extend the full length of the foundation and terminate against the informal plantings at either end.

There are probably other good solutions. A drive for better dooryard and foundation plantings is bound to react to our advantage (see illustration 31).

DROUGHT IN THE EAST.

This year so far has brought to the United States very unusual moisture conditions, in that the normally drier western half of the country has had a persistency of unusually abundant rainfall, while the more humid eastern states have suffered two severe droughts. During the late winter and spring months precipitation was scanty in eastern states, the spring being the driest of record in West Virginia, Ohio, Kentucky and Tennessee and the second driest in Virginia, Pennsylvania, New York and New England, according to the federal weather bureau bulletin.

However, the first half of June brought to the dry area substantial rainfall quite generally, which effectively relieved the agricultural situation, but the rains were not heavy enough to penetrate deeply and the subsoil remained relatively dry.

Another drought period set in the latter part of August, which by October 1 had assumed serious and widespread proportions, covering the entire Atlantic area and extending westward to the central Ohio valley and Tennessee. An unusual feature of September rainfall was the widespread uniformity in deficiencies; South Carolina had thirty-seven per cent of normal; North Carolina, thirty-nine per cent; Virginia, forty per cent; Pennsylvania, thirty-nine per cent, and Kentucky, thirty-nine per cent. New Jersey had an average of only three-tenths inch, or eight per cent of normal, and the driest September of record, while Maryland and Delaware had only fourteen per cent of normal, the least since 1884.

However, in relation to agriculture, conditions this year in the central-eastern states are not comparable to the record drought of 1930. That year large deficiencies in precipitation extended from the spring season through the summer and into the fall, whereas this year summer rainfall was about normal, which relieved the surface soil situation, and favored staple crops, though the subsoil continued dry. This dryness of the subsoil has a bearing on the current situation with regard to wells, springs and streams, which have become the lowest generally reported since 1930 and for fifty years in some northeastern areas.

The unusual features of this year's rainfall are emphasized by comparing Kansas, normally a relatively dry state, with Virginia in the humid area of the country, having fifty per cent more rainfall, on the average. This year, through September, Kansas has had nearly fifteen per cent more rainfall than Virginia.

L. A. WEBB has changed the name of his firm from his individual name to Camelia Land Nursery. The address remains the same, R. D. 1, Box 278A, Tigard, Ore.

Illustration 31.—A good type of foundation planting. The hemlock on the right might have been closer to the corner and more vine is needed at the left corner. Pachysandra and Cotoneaster horizontalis form the low mass.

Selection of Broad-leaved Evergreens

By L. C. Chadwick

In the articles dealing with the selection of woody broad-leaved evergreens it has been necessary to limit the discussions pertaining to the uses of the plants selected and their adaptability to various environmental conditions. The following lists have been prepared as an aid to the use of these plants and to afford a source of information to which one may turn to find plants suitable for definite purposes.

Preceding lists on habit of growth and culture appeared in the October 15 issue. This concludes the lists on uses which began in the November 1 issue.

D. USE—Continued

(19) Striking twig characters

(a) Thorny or bristly

Group 2
Rubus hispidus

Group 3
Berberis buxifolia nana
Berberis buxifolia pygmæa
Berberis candidula
Berberis verruculosa

Group 4
Berberis buxifolia
Berberis gagnepaini
Berberis julianæ
Berberis triacanthophora
Pyracantha coccinea pauciflora

Group 5
Pyracantha coccinea lalandi

Group 6
Elæagnus pungens

(b) Effective color

Group 2
Arctostaphylos uva-ursi
Cotoneaster dammeri radicans
Euonymus fortunei (radicans) colorata

Group 3
Euonymus fortunei (radicans) carrierei
Euonymus fortunei (radicans) vegeta

Group 4
Berberis sargentiana
Leucothoë catesbæi
Rhododendron carolinianum

Group 5
Cotoneaster salicifolia floccosa
Kalmia latifolia

Group 6
Elæagnus pungens reflexa

(c) Twigs scanty or openly branched

Group 3
Cotoneaster microphylla
Kalmia angustifolia
Yucca filamentosa

Group 5
Ilex cornuta
Mahonia bealei
Pyracantha coccinea lalandi
Stranvaesia davidiana undulata
Viburnum rhytidophyllum

Group 6
Ilex cassine
Ilex vomitoria

(d) Twigs profuse, densely branched

Group 3
Berberis buxifolia pygmæa
Buxus microphylla compacta
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Ilex crenata convexa
Ilex crenata (Kingsville type)
Lonicera nitida
Rhododendron obtusum amœnum coccinea
Rhododendron obtusum japonicum

Group 4
Berberis triacanthophora
Buxus sempervirens handsworthi
Buxus sempervirens Lynn Haven
Pieris japonica
Pyracantha coccinea pauciflora

Group 5
Buxus sempervirens angustifolia
Buxus sempervirens arborescens
Cotoneaster salicifolia floccosa
Ilex crenata microphylla

Group 6
Elæagnus pungens reflexa
Ilex opaca

(20) Plants with important leaf characters

(a) Compound or deeply cut

Group 1
Akebia quinata
Bignonia capreolata

Group 2
Mahonia repens
Potentilla tridentata
Rubus hispidus

Group 4
Mahonia aquifolium
Nandina domestica

Group 5
Mahonia bealei

(b) Small

Group 1
Akebia quinata
Euonymus fortunei (radicans)
Euonymus fortunei (radicans) minima

Group 2
Arctostaphylos uva-ursi
Calluna vulgaris
Cotoneaster dammeri radicans
Erica carnea
Euonymus fortunei (radicans)
Euonymus fortunei (radicans) minima
Leiophyllum buxifolium prostratum
Mitchella repens
Pachistima canbyi
Potentilla tridentata
Teucrium chamædrys
Vaccinium vitis-idæa minus

Group 3
Berberis buxifolia nana
Berberis buxifolia pygmæa
Berberis verruculosa
Buxus microphylla compacta
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Daphne cneorum
Ilex crenata convexa
Ilex crenata (Kingsville type)
Lonicera nitida
Rhododendron obtusum amœnum coccinea
Rhododendron obtusum japonicum

Group 4
Berberis chenaulti
Berberis triacanthophora
Buxus sempervirens handsworthi
Buxus sempervirens Lynn Haven
Ilex glabra
Pyracantha coccinea pauciflora

Group 5
Buxus sempervirens angustifolia
Buxus sempervirens arborescens
Ilex crenata latifolia
Ilex crenata microphylla

Group 6
Ilex cassine
Ilex pernyi
Ilex vomitoria

(c) Medium—Plants from selected list only.

Group 1
Euonymus fortunei (radicans) vegeta
Hedera helix baltica

Group 2
Euonymus fortunei (radicans) colorata
Hedera helix baltica
Pachysandra terminalis
Vinca minor bowles

Group 3
Euonymus fortunei (radicans) carrierei
Euonymus fortunei (radicans) vegeta
Kalmia latifolia myrtifolia
Pieris floribunda

Group 4
Berberis julianæ B.P.I.
Pieris japonica
Rhododendron carolinianum
Rhododendron carolinianum album

Group 5
Cotoneaster salicifolia floccosa
Kalmia latifolia
Pyracantha coccinea lalandi

Group 6
Ilex opaca
Ilex opaca croonenburg
Ilex opaca howardi
Ilex opaca hume
Ilex pernyi veitchi
Ilex pedunculosa

Group 7
Quercus nigra

(d) Large

Group 1
Bignonia capreolata

Group 2
Mahonia repens

Group 3
Yucca filamentosa

Group 4
Leucothoë catesbæi
Mahonia aquifolium
Rhododendron catawbiense
Rhododendron hybrid

Group 5
Mahonia bealei
Rhododendron maximum
Rhododendron maximum album
Rhododendron maximum purpureum
Rhododendron smirnowi
Viburnum rhytidophyllum

Group 6
Magnolia virginiana (glauca)

Group 7
Magnolia grandiflora
Quercus laurifolia
Quercus virginiana

(e) Fragrant when crushed

Group 2
Gaultheria procumbens

Group 3
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa

Group 4
Buxus sempervirens handsworthi
Buxus sempervirens Lynn Haven
Myrica cerifera pumila

Group 5
Buxus sempervirens angustifolia
Buxus sempervirens arborescens
Group 6
Magnolia virginiana (glauca)
Myrica cerifera

(f) Leaves normally dark green, dull or lustrous

Group 1
Akebia quinata
Bignonia capreolata
Bignonia capreolata atrosanguinea
Euonymus fortunei (radicans)
Euonymus fortunei (radicans) minima
Euonymus fortunei (radicans) vegeta
Hedera helix
Hedera helix baltica
Lonicera japonica halliana
Group 2
Arctostaphylos uva-ursi
Calluna vulgaris
Cotoneaster dammeri radicans
Erica carnea
Euonymus fortunei (radicans)
Euonymus fortunei (radicans) colorata
Euonymus fortunei (radicans) minima
Gaultheria procumbens
Gaylussacia brachycera
Hedera helix baltica
Mitchella repens
Pachistima canbyi
Potentilla tridentata
Rhododendron lapponicum
Rubus hispidus
Sarcococca hookeriana humilis
Teucrium chamædrys
Vaccinium vitis-idæa minus
Vinca minor bowles
Group 3
Berberis buxifolia pygmæa
Berberis verruculosa
Buxus microphylla compacta
Buxus sempervirens myrtifolia
Buxus sempervirens suffruticosa
Cotoneaster congesta
Cotoneaster conspicua decora
Cotoneaster microphylla
Daphne cneorum
Euonymus fortunei (radicans) carrierei
Euonymus fortunei (radicans) vegeta
Ilex crenata convexa
Kalmia angustifolia and vars.
Kalmia latifolia myrtifolia
Leiophyllum buxifolium
Lonicera pileata
Pieris floribunda
Rhododendron arbutifolium
Rhododendron indicum
Rhododendron obtusum amœnum coccinea
Rhododendron obtusum japonicum
Group 4
Berberis chenaulti
Berberis gagnepaini
Berberis julianæ B.P.I.
Berberis sargentiana
Berberis triacanthophora
Buxus sempervirens handsworthi
Buxus sempervirens Lynn Haven
Ilex glabra
Leucothoë catesbæi
Mahonia aquifolium
Nandina domestica
Osmarea burkwoodi
Pieris japonica
Pyracantha coccinea pauciflora
Rhododendron carolinianum album
Rhododendron catawbiense
Rhododendron mucronatum
Viburnum japonicum
Viburnum utile
Group 5
Buxus sempervirens angustifolia
Buxus sempervirens arborescens
Cotoneaster francheti
Cotoneaster henryi
Cotoneaster rotundifolia
Cotoneaster salicifolia floccosa
Ilex cornuta
Ilex cornuta burfordi
Ilex crenata latifolia
Ilex crenata microphylla
Ilex crenata rotundifolia
Kalmia latifolia
Ligustrum japonicum
Ligustrum sinense
Pyracantha coccinea lalandi
Rhododendron maximum album
Rhododendron maximum purpureum
Rhododendron smirnovi
Viburnum rhytidophyllum
Group 6
Elæagnus pungens reflexa
Ilex aquifolium and vars.
Ilex cassine
Ilex opaca and vars.
Ilex pernyi veitchi
Ilex pedunculosa
Ilex vomitoria
Ligustrum lucidum
Myrica cerifera
Osmanthus ilicifolius
Prunus laurocerasus schipkaensis
Prunus lusitanica
Group 7
Magnolia grandiflora
Quercus laurifolia
Quercus virginiana

(g) Leaves normally bluish-green

Group 2
Hypericum calycinum
Mahonia repens
Group 3
Yucca glauca
Group 5
Mahonia bealei
Group 6
Magnolia virginiana (glauca)
Group 7
Quercus nigra

(h) Leaves normally light green

Group 2
Pachysandra terminalis
Group 3
Lonicera nitida
Group 4
Buxus microphylla japonica
Euonymus kiautschovica (patens)
Group 5
Rhododendron fortunei

(i) Leaves normally highly colored or variegated

Group 1
Euonymus fortunei (radicans) reticulata
Hedera helix argenteo-variegata
Hedera helix aureo-variegata
Group 2
Euonymus fortunei (radicans) reticulata
Hedera helix argenteo-variegata
Hedera helix aureo-variegata
Vinca minor argenteo-variegata
Group 3
Yucca filamentosa variegata
Group 5
Buxus sempervirens argenteo-variegata
Buxus sempervirens aureo-variegata
Buxus sempervirens marginata
Euonymus japonica albo-marginata
Euonymus japonica argenteo-variegata
Euonymus japonica aureo-marginata
Euonymus japonica aureo-variegata
Euonymus japonica viridi-variegata
Group 6
Aucuba japonica variegata
Elæagnus pungens aurea
Elæagnus pungens variegata
Ilex aquifolium variegata

(j) Plants with outstanding fall and winter foliage

Group 1
Bignonia capreolata
Lonicera japonica halliana
Group 2
Arctostaphylos uva-ursi
Euonymus fortunei (radicans) colorata
Gaultheria procumbens
Mahonia repens
Pachistima canbyi
Rubus hispidus
Group 3
Berberis verruculosa
Cotoneaster microphylla
Rhododendron obtusum vars.
Group 4
Berberis sargentiana
Ilex glabra
Leucothoë catesbæi
Mahonia aquifolium
Nandina domestica
Group 5
Cotoneaster francheti
Cotoneaster salicifolia floccosa
Group 6
Elæagnus pungens reflexa
Photinia serrulata

(21) Plants with outstanding flowers

(a) Season of bloom and color

April

Group 2
Arctostaphylos uva-ursi—pinkish-white
Epigæa repens—pinkish-white
Erica carnea—rosy-red
Vinca minor bowles—blue
Group 3
Daphne cneorum—rose-pink
Pieris floribunda—white
Rhododendron obtusum amœnum coccinea—scarlet
Rhododendron obtusum japonicum—various
Group 4
Mahonia aquifolium—yellow
Osmarea burkwoodi—white
Pieris japonica—white
Siphonosmanthus delavayi—white
Group 5
Phillyrea decora—white
Group 6
Osmanthus americanus—white

May

Group 1
Akebia quinata—rosy-purple
Bignonia capreolata—red-orange
Bignonia capreolata atrosanguinea—dark reddish-purple
Group 2
Cotoneaster dammeri radicans—white-pink
Mahonia repens—yellow
Vaccinium vitis-idæa minus—pinkish-white
Group 3
Berberis candidula—yellow
Berberis verruculosa—yellow
Cotoneaster microphylla—white
Kalmia angustifolia candida—white
Kalmia angustifolia rubra—dark purple
Kalmia latifolia myrtifolia—rosy-pink
Rhododendron arbutifolium—rose
Rhododendron caucasicum—pinkish-white
Group 4
Berberis chenaulti—yellow
Berberis julianæ—yellow
Berberis triacanthophora—whitish tinged red
Leucothoë catesbæi—white
Pyracantha coccinea pauciflora—white
Rhododendron carolinianum—rosy-purple
Rhododendron carolinianum album—white
Rhododendron catawbiense—lilac-purple
Rhododendron hybrids—various
Rhododendron mucronatum—white
Viburnum japonicum—white
Viburnum utile—white
Group 5
Cotoneaster salicifolia floccosa—white
Kalmia latifolia—rosy-pink, white
Kalmia latifolia alba—white
Kalmia latifolia rubra—deep pink
Pyracantha coccinea lalandi—white
Raphiolepis indica—pinkish-white
Raphiolepis umbellata—white
Rhododendron cunninghami—whitish-purple
Rhododendron decorum—whitish-pink

Rhododendron discolor—whitish-pink
Rhododendron fargesi—whitish-rose
Rhododendron fortunei—rosy-lilac
Rhododendron smirnovi—rosy-red
Viburnum rhytidophyllum—yellowish-white
Group 6
Photinia serrulata—white
Group 7
Magnolia grandiflora—white
June
Group 1
Lonicera japonica halliana—white changing to yellow
Group 2
Potentilla tridentata—white
Rhododendron lapponicum—purple
Group 3
Rhododendron hirsutum—carmine
Rhododendron hirsutum albiflorum—white
Rhododendron indicum—various
Rhododendron myrtifolium—rose-pink
Group 4
Nandina domestica—white
Rhododendron przewalski—whitish-pink
Group 5
Osmanthus fortunei—white
Rhododendron maximum—rosy-pink-purple
Rhododendron maximum album—white
Rhododendron maximum purpureum—purple
Stranvaesia davidiana undulata—white
Group 6
Magnolia virginiana (glauca)—white
Osmanthus ilicifolius—white
Prunus laurocerasus—white
Prunus laurocerasus schipkaensis—white
Prunus lusitanica—white
July
Group 2
Calluna vulgaris—rosy-pink
Calluna vulgaris alba—white
Calluna vulgaris atropubens—crimson
Calluna vulgaris hammondi—white
Calluna vulgaris nana—purple
Erica vagans—pinkish-purple
Erica vagans alba—white
Erica vagans grandiflora—pinkish-purple
Erica vagans rubra—deep pink to purple
Hypericum calycinum—yellow
Teucrium chamædrys—purple-rose
Group 3
Rhododendron ferrugineum—pink-carmine
Rhododendron ferrugineum album—white
Rhododendron ferrugineum atrococcineum—scarlet
Yucca filamentosa—yellowish-white
Yucca glauca—greenish-white
August
Group 6
Ligustrum lucidum—white
September
Group 5
Osmanthus armatus—white
October
Group 6
Elæagnus pungens reflexa—white
(b) Fragrant flowers
Group 2
Epigæa repens
Group 3
Daphne cneorum
Kalmia latifolia myrtifolia
Group 4
Osmarea burkwoodi
Siphonosmanthus delavayi
Group 5
Kalmia latifolia
Osmanthus armatus
Osmanthus fortunei
Raphiolepis umbellata
Group 6
Elæagnus pungens reflexa
Magnolia virginiana (glauca)
Osmanthus americanus
Osmanthus ilicifolius
Group 7
Magnolia grandiflora
(c) Continuous bloom
Group 1
Lonicera japonica halliana
Group 2
Calluna vulgaris and vars.
Erica carnea
Erica vagans and vars.
Hypericum calycinum
Vinca minor bowles
Group 4
Ligustrum quihoui
Group 6
Elæagnus pungens reflexa
Magnolia virginiana (glauca)
Group 7
Magnolia grandiflora
(22) Plants with outstanding fruits
Group 1
Euonymus fortunei (radicans) vegeta—red-orange
Group 2
Arctostaphylos uva-ursi—bright red
Cotoneaster dammeri radicans—bright red
Gaultheria procumbens—scarlet
Michella repens—scarlet
Vaccinium vitis-idæa minus—red
Group 3
Berberis verruculosa—violet-blue
Cotoneaster congesta—bright red
Cotoneaster conspicua decora—scarlet
Cotoneaster microphylla—scarlet
Euonymus fortunei (radicans) carrierei—red-orange
Euonymus fortunei (radicans) vegeta—red-orange
Ilex crenata convexa—black
Lonicera pileata—violet-purple
Mahonia nervosa—dark blue
Group 4
Berberis chenaulti—bluish-black
Berberis gagnepaini—bluish-black
Berberis julianæ—bluish-black
Berberis sargentiana—bluish-black
Berberis triacanthophora—blue-black
Euonymus kiautschovica (patens)—pinkish-orange-red
Ilex glabra—black
Mahonia aquifolium—bluish-black
Nandina domestica—red
Pyracantha coccinea pauciflora—orange-red
Viburnum japonicum—red
Viburnum utile—black
Group 5
Cotoneaster francheti—orange-red
Cotoneaster henryana—dark crimson
Cotoneaster rotundifolia—red
Cotoneaster salicifolia floccosa—bright red
Ilex cornuta—red
Ilex cornuta burfordi—red
Ilex crenata microphylla—black
Phillyrea decora—purple-black
Photinia glabra—red
Pyracantha coccinea lalandi—orange-red
Pyracantha crenata-serrata (gibbsi)—coral-red
Raphiolepis indica—bluish-black
Raphiolepis umbellata—bluish-black
Stranvaesia davidiana undulata — coral-red to orange
Viburnum rhytidophyllum—black (pinkish-red early)
Group 6
Elæagnus pungens reflexa—red
Ilex aquifolium and vars.—red
Ilex cassine—red
Ilex crenata latifolia—black
Ilex opaca and most vars.—red
Ilex opaca xanthocarpa—yellow
Ilex pedunculosa—red
Ilex pernyi and var.—red
Ilex vomitoria—red
Ligustrum lucidum—blue-black
Magnolia virginiana (glauca)—red
Myrica cerifera—gray-white
Osmanthus americanus—dark blue
Osmanthus ilicifolius—blue-black
Photinia serrulata—red-orange
Pyracantha atalantioides—scarlet
Pyracantha crenulata—orange-red
Pyracantha crenulata flava—yellow
Group 7
Magnolia grandiflora—red

ILLINOIS SALES TAX CASE.

Decision in the Circuit court at Chicago was rendered in favor of William A. Beaudry & Associates, landscape architects, Chicago, on an appeal from the state board's ruling as to the payment of the so-called sales tax on landscape contracts. The attorney for this firm successfully presented his plea that the execution of landscape contracts is a professional occupation. Further, it was maintained, the landscape architect or contractor is the user of nursery stock in executing a planting, because what he sells the client is a completed artistic design or picture.

The Illinois tax, different from that in some other states, is a retailers' occupation tax. It is paid by the retailer as a merchant who sells tangible personal property which is unchanged in form as it passes to the consumer. It is collected from the retailer, not from the consumer, although in practice it is generally passed on to the latter in one form or another.

It is quite likely that an appeal will be made by the state from the Circuit court decision and that the case will be carried to the Supreme court. Since the outcome would affect the tax payments of landscape architects, landscape contractors and nurserymen doing a similar business in the state, several firms in these categories have become interested in the case and its ultimate disposal.

A previous case against the retailers' occupation tax brought a verdict against the taxpayer, Swain Nelson & Sons Co., Glenview, Ill. The contention in that case was that trees and shrubs had been held to be part of the real estate in other instances, and their transfer from one piece of land to another did not change their status from real to personal property. The court ruled against that construction for sales tax purposes.

THE address of Roland Martin, operating the Martin Tree Nursery, Fond du Lac, Wis., has been changed from 228 East Division street to Route 3.

"Standardized Plant Names" Out Soon

Announcement that the revised and greatly enlarged second edition of "Standardized Plant Names" definitely will come from the press early in January is welcome news to those who have been in touch with the progress of this really monumental undertaking. It should be of much interest, also, to any other persons who have to do with plant names. For within the covers of this one book will be found the correct spelling and application, on the basis of the best authorities, of both the scientific and common names of plants in American commerce or use.

Much description is saved by the reproduction herewith of the first page of the list of 90,000 entries in this volume of nearly 700 pages. The short introductory paragraphs at the top of the page explain the manner of presenting the names, and the procedure is well illustrated by the entries on this first page of the volume.

The purpose of "Standardized Plant Names" is to list those plants which are of interest to the American public, whether of ornamental or economic importance. So far as nurserymen are concerned, this plant list should facilitate business transactions between buyers and sellers of plants and make them more profitable. There should be no misunderstanding in ordering from catalogues which follow the nomenclature in this book, provided the buyer knows accurately what he is ordering. The book, consequently, is of value to the buyer so that he may be certain that he is ordering exactly.

Another highly important purpose of the book is to standardize plant nomenclature, by giving the most accurate scientific name ascertainable for each species, together with what the compilers believe to be the best English name. This principle has long been followed by the United States Forest Service, which has set one accepted common name for each tree species and variety. The service of such selection among common names is apparent in the solution of the problem one faces in finding thirty-five different genera called ironwood, fifteen genera called satinwood, about a dozen genera called gum, etc.

In a sense this new volume of "Standardized Plant Names" represents a development of several decades. The problem of definite and accurate plant nomenclature led to the formation in 1915 of the American Joint Committee on Horticulture Nomenclature by committees of the American Association of Nurserymen and the Ornamental Growers Association. Subsequently there participated in underwriting the work of the committee the American Society of Landscape Architects, American Pharmaceutical Association, American Institute of Park Executives and Society of American Florists. Other organizations coöperating were the American Dahlia Society, American Gladiolus Society, American Iris Society, American Peony Society, American Pomological Society, American Rose Society, American Seed Trade Association and American Sweet Pea Society.

Dr. J. Horace McFarland has been chairman of the American Joint Committee since its institution and Harlan P. Kelsey, secretary. The compilation of the first edition of "Standardized Plant Names" was composed by a committee of Mr. Kelsey, Frederick Law Olmsted, noted landscape architect, and Frederick V. Coville, of the United States Department of Agriculture.

Their efforts resulted in the publication of the first edition in 1923. The book of 600 pages, much smaller in page size and carrying only two columns, was limited largely to horticultural and agricultural plant names. This was a notable step forward, but it was soon recognized that the list was far from being complete enough.

It was expected that a revision would be published in five or ten years, but the task of compiling a list so complete and authoritative as this second edition took years longer. The persistence of Dr. McFarland and Mr. Kelsey kept the project alive, and the fruition of their plans was made possible when the backing of the United States Department of Agriculture was obtained. W. A. Dayton, senior ecologist of the United States Forest Service, was loaned to the job. A famed botanist and plant ecologist with wide practical experience in the field, he has been described by Mr. Kelsey as "the greatest living expert on common plant names."

Assistance was given by more than 200 collaborators, specialists in their respective plant fields. The Arnold Arboretum gave assistance, and Prof. Alfred Rehder checked the botanical names of all woody plants.

As the task of compilation has advanced in the past few years, the undertaking seemed to become greater. The committee considered the volume ready for the printer more than a year and one-half ago, and announcement was made of its publication by a noted publishing firm. But more time passed before the text was complete. Finally Dr. McFarland took over the task of publication, and now that the presses are actually printing the pages, announcement of the time of appearance is made with confidence that those who place early orders to take advantage of the prepublication price will receive delivery of copies in January.

No trade organization has contributed to the preparation of the second edition, as was the case of the participating organizations in the first. But the fact that this volume should be in the reference library or on the desk of every nurseryman, and any other person concerned with plant names, gives anticipation of widespread distribution of so extraordinarily useful and valuable a volume.

CALOMEL FOR CROWN GALL.

Following up their recent discovery that losses from crown gall on seedling peach trees may be reduced materially by dipping peach pits in a strong solution of calomel, E. A. Siegler and J. J. Bowman, of the federal bureau of plant industry, report that calomel treatments are almost as effective in preventing crown gall on plum and cherry seedlings. This treatment is also being tried on apple and pear seedlings.

The calomel treatment for plums and cherries is relatively simple. The

seedling plants are merely dipped in a dilute suspension of calomel in water. It is common nursery practice to dig seedlings of apples, pears, plums and cherries at the end of their first season's growth, store them over winter at about 40 degrees Fahrenheit and prune the roots just before planting in the spring. This practice exposes the freshly pruned root surfaces to crown gall infection. Siegler and Bowman reasoned that by pruning the roots early and allowing a callus to form over the wounds some measure of protection would be afforded. They reasoned that a protective coating of calomel on these callused areas would give further protection.

Preliminary tests have reduced losses on plum trees from fifty-four to thirteen per cent and on cherry trees from twenty-nine to five per cent. Further experiments are in progress. Calomel is effective because it is practically insoluble in water and is thus a slow-acting disinfectant. Also, its action is spread out over a comparatively long period and keeps the plant tissues protected from bacterial disease organisms in the soil.

STANDARDIZED PLANT NAMES

BOLD-face, whether capitals or small letters, indicates approved scientific names.

SMALL CAPITALS indicate approved common and horticultural variety names.

ITALIC, whether capitals or *small letters*, indicates synonyms or unapproved names.

Abbreviations: hort. var.; HV. = horticultural variety (or varieties)*; sp. = species (singular); spp. = species (plural).

Symbols: ¢ = clon; × (as a prefix) = hybrid; × (between scientific plant names) = crossed by; ∞ = polybrid; lw = plant useful to wildlife. (See Glossary for definitions of *clon*, *hybrid*, and *polybrid*.)

Names of authors are omitted after botanical names except in the cases of homonyms; in such cases authors are necessary to distinguish otherwise identical names.

*In tabular lists of hort. var. the symbol HV. appears after the first entry only, and is understood to apply to all immediately following. Examples: See hort. var. of Aster alpinus, p. 25, or Hibiscus syriacus, p. 304.

ABBEVIL'LEA (*CAMPOMANESIA*)
fenzlia'na (*Campomanesia f.*) GUABIROBA

ABE'LIA . . . . . ABELIA
biflo'ra . . . . . TWINFLOWER A.
chinen'sis (*rupestris*) . . CHINESE A.
engleria'na . . . . . ENGLER A.
floribun'da . . . . . MEXICAN A.
graebneria'na . . . GRAEBNER A.
—vedrarien'sis
∞ **grandiflo'ra** (*chinensis* × *uniflora*) ∞ GLOSSY A.
rupes'tris . . . . . **A. chinensis**
schu'manni (*longituba* Turrill, *not* Rehd.) . . . . . SCHUMANN A.
serra'ta . . . . . NOTCHLEAF A.
spathula'ta . . . . . JAPANESE A.
triflo'ra . . . . . HIMALAYA A.
umbella'ta . . . . . UMBEL A.
uniflo'ra . . . . . PINKBELL A.
zan'deri . . . . . ZANDER A.
¢GOUCHER (∞ *grandiflora* × *schumanni*) HV. Abelia '
¢SHERWOOD (*sherwoodi*)

ABELIA . . . . . **Abelia**
CHINESE A. . . . . **A. chinensis**
ENGLER A. . . . . **A. engleriana**
∞ GLOSSY A. . . . . ∞ **A. grandiflora**
GRAEBNER A. . . . **A. graebneriana**
HIMALAYA A. . . . . **A. triflora**
JAPANESE A. . . . . **A. spathulata**
MEXICAN A. . . . . **A. floribunda**
NOTCHLEAF A. . . . . **A. serrata**
PINKBELL A. . . . . **A. uniflora**
SCHUMANN A. . . . . **A. schumanni**
TWINFLOWER A. . . . . **A. biflora**
UMBEL A. . . . . **A. umbellata**
ZANDER A. . . . . **A. zanderi**

ABELIALEAF . . . . . **Abeliophyllum**
KOREAN A. . . . . **A. distichum**

ABELIOPHYL'LUM . . . ABELIALEAF
dis'tichum . . . . . KOREAN A.

ABELMOS'CHUS . . . **HIBISCUS**

ABE'RIA . . . . . **DOVYALIS**
gard'neri . . . . . **D. hebecarpa**

A'BIES lw . . . . . FIR
al'ba (*nobilis* A. Dietr., *not* Lindl.; *pectinata; picea* Lindl., *not* Mill.) SILVER F.
—columna'ris . . . COLUMNAR S.F.
—compac'ta . . . . . DWARF S.F.
—equi-tro'jani . . . . TROJAN S.F.
—pen'dula . . . . . WEEPING S.F.
—pyramida'lis . . . . SENTINEL S.F.
—tortuo'sa . . . . . TWISTED S.F.
amab'ilis . . . . . CASCADES F.; PACIFIC SILVER F. (Forestry)

ABIES, continued
apol'linis . . . . . **A. cephalonica a.**
arizo'nica . . . . . **A. lasiocarpa a.**
baboren'sis . . . . . **A. numidica**
balsa'mea lw . . . . . BALSAM FIR
—hudso'nia (*A. b. hudsonica*) HUDSON B.F.
—macrocar'pa . . . . BIGCONE B.F.
—na'na . . . . . DWARF B.F.
—phanero'lepis . . . BRACTED B.F.
beissneria'na Mott. (1902) ×**A. insignis b.**
beissneria'na Rehd. & Wils. (1914) **A. ernesti**
bi'fida . . . . . **A. firma**
borisire'gis . . . . KINGBORIS F.
bornmuelleria'na . . BORNMUELLER F.
brachyphyl'la . . . . . **A. homolepis**
bracteo'ta . . . . . **A. venusta**
cephalon'ica . . . . . GREEK F.
—apol'linis (*A. apollinis*) . APOLLO F.
chensien'sis . . . . . SHENSI F.
cilic'ica . . . . . CILICIAN F.
con'color lw . . . . . WHITE F.
—au'rea . . . . . GOLDEN W.F.
—brevifo'lia . . . . SHORTLEAF W.F.
—can'dicans . . . . . HOARY W.F.
—co'nica . . . . . CONICAL W.F.
—globo'sa . . . . . GLOBE W.F.
—lowia'na (*A. lowiana*). PACIFIC W.F.
—pen'dula . . . . WEEPING W.F.
—viola'cea . . . PURPLECONE W.F.
—watte'zi . . . . . WATTEZ W.F.
delavayi' Mast., *not* Franch. . **A. fabri**
ernest'i (*beissneriana* Rehd. & Wils., *not* Mott.) . . . . . ERNEST F.
fa'bri (*delavayi* Mast., *not* Franch.; *faberi*) . . . . . FABER F.
far'gesi . . . . . FARGES F.
¢WEEPING. HV.
faxonia'na . . . . . FAXON F.
firm'a (*bifida; momi*) . . . MOMI F.
for'resti . . . . . FORREST F.
fra'seri . . . . . FRASER BALSAM F.
—prostra'ta . . . PROSTRATE F.B.F.
gam'blei . . . . **A. pindrow brevifolia**
george'i . . . . . GEORGES F.
gran'dis (*gordoniana*) . . . GRAND F.
holophyl'la . . . . . MANCHURIAN F.
homole'pis (*brachyphylla; tschonoskiana*) . . . . . NIKKO F.
—scot'tae . . . . . DWARF N.F.
—tomo'mi (*A. tomomi*). TOMOMI N.F.
—umbella'ta (*A. umbilicata*) DIMPLECONE N.F.
×**insig'nis** (*nordmanniana* × *pinsapo*) NORDISH F.
×**—beissneria'na** (*A. beissneriana* Mott., *not* Rehd. & Wils.) BEISSNER N.F.
¢KENT (*kentiana*) HV. A. insignis

ABIES insignis, continued
¢MASTERS (*mastersiana*)
¢SPECIOSA
kawaka'mi . . . . KAWAKAMI FIR
korea'na . . . . . KOREAN F.
lasiocar'pa (*subalpina*) lw . ALPINE F.
—arizo'nica (*A. arizonica*) CORKBARK F.
—compac'ta . . . . . DWARF A.F.
lowia'na . . . . . **A. concolor l.**
magnif'ica lw . . . . . RED F.; CALIFORNIA R.F. (Forestry)
—argen'tea . . . . SILVERLEAF R.F.
—glau'ca . . . . . AZURE R.F.
—shasten'sis (*A. shastensis*) SHASTA R.F.
maries'i . . . . . MARIES F.
mo'mi . . . . . **A. firma**
nephro'lepis . . . . . KHINGAN F.
no'bilis A. Dietr. . . . . **A. alba**
no'bilis Lindl. . . . . **A. procera**
nordmannia'na . . . . NORDMANN F.
—au'rea . . . . . GOLDEN N.F.
—tortifo'lia . . . TWISTLEAF N.F.
numid'ica (*baborensis*) . . ALGERIAN F.
—glau'ca . . . . . BLUE A.F.
pectina'ta . . . . . **A. alba**
pi'cea Lindl., *not* Mill. . . . **A. alba**
pi'cea Mill . . . . . **Picea abies**
pind'row . . . . . PINDROW F.
—brevifo'lia (*A. gamblei*) SHORTLEAF P.F.
pinsa'po . . . . . SPANISH F.
—glau'ca . . . . . BLUE S.F.
—pen'dula . . . . . WEEPING S.F.
pro'cera (*nobilis* Lindl., *not* A. Dietr.) NOBLE F.

Prof. Rehder offers the new name, Abies procera, to replace Lindley's A. nobilis, which he has recently discovered to be a homonym and untenable.

—argen'tea . . . . . SILVER N.F.
—glau'ca . . . . . BLUELEAF N.F.
recurva'ta . . . . . MIN F.
religio'sa . . . . . SACRED F.
sachalinen'sis . . . . SAKHALIN F.
—nemoren'sis (*A. wilsoni*) WILSON S.F.
shasten'sis . . . . . **A. magnifica s.**
sibir'ica . . . . . SIBERIAN F.
spectab'ilis (*webbiana*) . HIMALAYAN F.
—brevifo'lia . . . SMOOTHBARK H.F.
squama'ta . . . . . FLAKY F.
subalpi'na . . . . . **A. lasiocarpa**
sutchuenen'sis . . . SZECHWAN F.
tomo'mi . . . . . **A. homolepis t.**
tschonoskia'na . . . . **A. homolepis**
umbella'ta . . . . . **A. homolepis u.**
umbilica'ta . . . . . **A. h. umbellata**
veitch'i . . . . . VEITCH F.
—nikkoen'sis . . . LITTLECONE V.F.

This Business of Ours

Reflections on the Progress and Problems of Nurserymen

By Ernest Hemming

OUR PUBLIC.

We recently received an order to plant a garden on a prominent lot in the center of a neighboring town. A public-spirited citizen with the coöperation of the local garden club was interested in making a spot of beauty out of a very ugly lot. Such an undertaking on the main corner of a town of about 8,000 or 10,000 population is bound to attract many a kibitzer, with comments favorable, unfavorable and humorous.

The comments went in one ear and out the other until a well dressed middle-aged man came along and floored me with a remark that has been under my skin ever since. His comment was, "You fellows seem to know what you are doing. I didn't think there was enough of that kind of work done to make it worth while knowing how." Isn't that indicative of the ineffectual publicity we nurserymen have given the public? Can you imagine any of the other semi-luxury "necessities" of civilization leaving their public with ideas like that?

This is where we think the florist has the edge on the nursery end of the business. It is hard to imagine a remark of that kind being made in relation to a job of floral decoration, even back in the sticks.

The moral, if any, is that retail nurseries should contrive more "show windows" for their goods.

E. S. H.

VITAMIN B_1.

The trained plantsman, who knows that maximum plant growth is obtained when ideal cultural conditions are supplied a plant, is annoyed when the layman attempts to cure all sorts of sins of omission by the use of hocus-pocus. The chances are that under certain conditions plants are unable to obtain vitamin B_1 and the chances are that plants need it in their life processes. We shall leave it to the scientists to prove its importance in the life of plants, and after the complete information is obtained then it can be turned over to the public. The scientists and the popular articles with their incomplete information have done horticulture an immense amount of harm. If they realized the bizarre ideas which the public with which nurserymen come into contact has in regard to the efficacy of vitamin B_1, they would be more sure of their evidence before recommending it as an amazing cure-all.

Under such circumstances it is at least helpful when such eminent authorities, whom the lay public will be more apt to believe, as Dr. A. E. Hitchcock and Dr. P. W. Zimmerman, in volume 12, No. 2, of Contributions from Boyce Thompson Institute, give a report on "Further Tests with Vitamin B_1 on Established Plants and on Cuttings." It is their opinion from results obtained that "vitamin B_1 should not be recommended for practical use in treating cuttings or as a soil amendment until there is more substantial evidence than at present to show that plants or cuttings can benefit from an external supply of vitamin B_1."

Using China aster seedlings grown in flats, the experimenters did find slightly greater growth in those watered with the vitamin B_1 solution, but it was perhaps due to other causes, because a further and more extensive test using the same variety of plants in pots gave negative results, and there was not the competition for nutrients and light in the test of the potted plants.

The tests on the application of vitamin B_1 to the rooting of cuttings is of particular interest to nurserymen;

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ALMOND, PRUNUS GLANDULOSA. Double Pink-flowering, own root.

	Per 100	Per 1000
12 to 18 ins., tr., well br.	$12.00	.....
18 to 24 ins., tr., well br.	17.50	.....
2 to 3 ft., tr., well br.	22.50	.....
3 to 4 ft., tr., well br.	27.50	.....

BERBERIS THUNBERGII. Japanese Barberry.

3 to 6 ins., s.	$ 0.50	$ 4.00
6 to 9 ins., s.	.70	6.00
9 to 12 ins., s.	1.00	8.00
15 to 18 ins., tr.	6.00	50.00
18 to 24 ins., tr.	9.00	80.00
24 to 30 ins., tr.	12.00	100.00
30 to 36 ins., tr.	15.00	.....

CALLICARPA AMERICANA. American Beauty-berry.

6 to 12 ins., s.	$2.00	$15.00
12 to 18 ins., s.	2.50	20.00
18 to 24 ins., s.	2.00	25.00

CORNUS AMOMUM. Silky Dogwood.

6 to 12 ins., c.	$1.25	$10.00
12 to 18 ins., c.	2.00	15.00
18 to 24 ins., c.	3.00	20.00

CORNUS STOLONIFERA. Red Osier Dogwood.

6 to 12 ins., s.	$0.60	$ 5.00
12 to 18 ins., s.	.70	6.00
18 to 24 ins., s.	.80	7.00
12 to 18 ins., tr.	3.00	25 00
18 to 24 ins., tr.	4.00	35.00
2 to 3 ft., tr.	5.00	40.00

DEUTZIA SCABRA.
Candidissima Flore-pleno, double white.
Crenata, double pink.
Pride of Rochester, double rose.

12 to 18 ins., c.	$1.25	$10.00
18 to 24 ins., c.	1.50	12.00
12 to 18 ins., well br.	3.00	25.00
18 to 24 ins., well br.	4.00	35.00
2 to 3 ft., well br.	5.00	45.00

FORSYTHIA FORTUNEI. Fortune Forsythia.
FORSYTHIA INTERMEDIA. Border Forsythia.
FORSYTHIA SIEBOLDII. Upright Forsythia.
FORSYTHIA VIRIDISSIMA. Green-stemmed Forsythia.

6 to 12 ins., c.	$2.00	$15.00
12 to 18 ins., c.	2.50	20.00
18 to 24 ins., c.	3.00	25.00

HYPERICUM DENSIFLORUM.
HYPERICUM PROLIFICUM.

6 to 12 ins., s.	$1.00	$ 8.00
12 to 18 ins., s.	1.25	10.00
18 to 24 ins., s.	2.00	15.00

LIGUSTRUM OBTUSIFOLIUM. Ibota Privet.

6 to 12 ins., s.	$0.90	$ 7.50
12 to 18 ins., s.	1.00	8.00
18 to 24 ins., s.	1.25	10.00
2 to 3 ft., s.	1.50	12.00

LIGUSTRUM OVALIFOLIUM. California Privet.

6 to 12 ins., 2 br. up	$1.25	$10.00
12 to 18 ins., 2 br.	1.50	12.50
Grafting grade	1.50	12.50
12 to 18 ins., 3 br. up	2.00	15.00
18 to 24 ins., 2 br.	2.00	15.00
18 to 24 ins., 3 br. up	2.75	22.00
2 to 3 ft., 4 br. up	3.50	30.00
3 to 4 ft., 4 br. up	4.50	40.00

LONICERA FRAGRANTISSIMA. Winter Honeysuckle.

6 to 12 ins., c.	$1.50	$12.00
12 to 18 ins., c.	2.00	16.00
18 to 24 ins., c.	2.50	20.00
12 to 18 ins., 2-yr., 3 br. up	3.50	30.00
18 to 24 ins., 2-yr., 3 br. up	6.00	50.00
2 to 3 ft., 2-yr., 4 br. up	12.00	.....

LONICERA MORROWII. Morrow's Honeysuckle.
LONICERA TATARICA. Tatarian Honeysuckle.
Alba, white.
Rosea, pink.
Rubra, red.

6 to 12 ins., c.	$2.00	$15.00
12 to 18 ins., c.	2.50	20.00
18 to 24 ins., c.	3.00	25.00
12 to 18 ins., hedging	4.00	35.00
18 to 24 ins., hedging	5.00	45.00
18 to 24 ins., well br.	8.00	.....
2 to 3 ft., well br.	12.00	.....

RHUS CANADENSIS. (Aromatica). Fragrant Sumac.

	Per 100	Per 1000
12 to 18 ins., s.	$2.50	$20.00
18 to 24 ins., s.	3.00	25.00
18 to 24 ins., tr.	12.50	.....
2 to 3 ft., tr.	15.00	.....
3 to 4 ft., tr.	20.00	.....

RHUS COPALLINA. Shining Sumac.

12 to 18 ins., s.	$1.00	$ 7.00
18 to 24 ins., s.	1.25	9.00
2 to 3 ft., s.	1.50	12.00
18 to 24 ins., tr.	6.00	50.00
2 to 3 ft., tr.	10.00	80.00

RHUS. Sumac.
Glabra, smooth sumac.
Typhina, staghorn sumac.

12 to 18 ins., s.	$1.00	$ 7.00
18 to 24 ins., s.	1.25	9.00
2 to 3 ft., s.	1.50	12.00
3 to 4 ft., s.	2.50	20.00

SPIRÆA ARGUTA. Garland Spiræa.

6 to 12 ins., c.	$3.00	$25.00
12 to 18 ins., c.	3.50	30.00
18 to 24 ins., c.	4.00	35 00
12 to 18 ins., hedging	4.50	40.00
18 to 24 ins., hedging	5.50	50.00
18 to 24 ins., 2-yr., tr.	10.00	.....
2 to 3 ft., 2-yr., tr.	12.00	.....

SPIRÆA PRUNIFOLIA. Bridal Wreath.

12 to 18 ins., tr.	$10.00	.....
18 to 24 ins., tr.	12.00	.....
2 to 3 ft., tr.	15.00	.....
3 to 4 ft., tr.	20.00	.....

SPIRÆA THUNBERGII. Thunberg's Spiræa.

6 to 12 ins., c.	$ 3.00	$25 00
12 to 18 ins., c.	3.50	30.00
18 to 24 ins., c.	4.00	35.00
18 to 24 ins., tr.	10.00	.....
2 to 3 ft., tr.	15.00	.....

SPIRÆA VANHOUTTEI.

6 to 12 ins., c.	$1.25	$10.00
12 to 18 ins., c.	1.50	12.00
18 to 24 ins., c.	2.00	15.00
12 to 18 ins., hedging	3.00	25.00
18 to 24 ins., hedging	3.5[illegible]	30 00
2 to 3 ft., hedging	5.00	40 00
18 to 24 ins., well br.	5.00	40.00
2 to 3 ft., well br.	8 50	75.00

SYMPHORICARPOS VULGARIS. Coralberry.

6 to 12 ins., c.	$0.70	$ 6.00
12 to 18 ins., c.	1.00	8.00
12 to 24 ins., c.	1.25	10.00
12 to 18 ins., tr.	3.00	25.00
18 to 24 ins., tr.	3.50	30.00
2 to 3 ft., tr.	6.00	50.00

WEIGELA.
Amabilis, light pink.
Hendersonii, dark pink.
Mme. Lemoine, dark pink.
Rosea, pink.

6 to 12 ins., c.	$ 2.00	$15.00
12 to 18 ins., c.	2.50	20.00
18 to 24 ins., c.	3.00	25.00
12 to 18 ins., well br.	4.00	.....
18 to 24 ins., well br.	5.00	.....
2 to 3 ft., well br.	10.00	.....

FOREST AND SHADE TREES

ALBIZZIA JULIBRISSIN. Mimosa Tree.

12 to 18 ins., s.	$ 5.00	$40.00
18 to 24 ins., s.	6.00	50.00
2 to 3 ft., s.	10.00	.....
3 to 4 ft., tr.	35.00	.....
4 to 5 ft., tr.	.....	.....

CATALPA BUNGEI.

4 to 5 ft.	$50.00	.....
5 to 6 ft.	65.00	.....

CATALPA SPECIOSA. Western Catalpa.

12 to 18 ins., s.	$ 0.60	$5.00
18 to 24 ins., s.	.80	7.00
2 to 3 ft., s.	1.00	8.00
4 to 5 ft., tr., whips	8.00	.....
4 to 5 ft., tr., br.	10.00	.....
5 to 6 ft., tr., br.	12.00	.....

CERCIS CANADENSIS. American Redbud.

6 to 12 ins., s.	$ 0.60	$ 5.00
12 to 18 ins., s.	1.00	8.00
18 to 24 ins., s.	1.25	10.00
2 to 3 ft., s.	2.00	15.00
3 to 4 ft., tr.	15.00	.....
4 to 5 ft., tr.	25.00	.....
5 to 6 ft., tr.	35.00	.....
6 to 8 ft., tr.	60.00	.....

FOREST AND SHADE TREES
(Continued)

CERCIS CHINENSIS. Chinese Redbud.

	Per 100	Per 1000
6 to 12 ins., s.	$ 5.00	$40.00
12 to 18 ins., s.	6.00	50.00

CORNUS FLORIDA. White-flowering Dogwood.

6 to 12 ins., s.	$ 1.25	$10.00
12 to 18 ins., s.	2.00	15.00
Special grafting grade	2.50	20.00
2 to 3 ft., tr. br.	15.00	.....
3 to 4 ft., tr. br.	30.00	.....
4 to 5 ft., tr. br.	50.00	.....
5 to 6 ft., tr. br.	65.00	.....

Cost of B&B to be added if wanted balled.

CORNUS FLORIDA RUBRA. Pink-flowering Dogwood.

2 to 3 ft., bare root	$ 45.00	.....
2 to 3 ft., B&B	75.00	.....
3 to 4 ft., bare root	90.00	.....
3 to 4 ft., B&B	130.00	.....
4 to 5 ft., bare root	150 00	.....
4 to 5 ft., B&B	200.00	.....

CORNUS FLORIDA AND CORNUS FLORIDA RUBRA. Combination, two colors on the same tree.

	Per 10
2 to 3 ft., bare root	$10.00
2 to 3 ft., B&B	13.00
3 to 4 ft., bare root	15.00
3 to 4 ft., B&B	20.00
4 to 5 ft., bare root	25.00
4 to 5 ft., B&B	30.00

FRAXINUS AMERICANA. White Ash.
FRAXINUS LANCEOLATA. Green Ash.

	Per 100	Per 1000
6 to 12 ins., s.	$ 0.35	$ 2.50
12 to 18 ins., s.	.50	4.00
18 to 24 ins., s.	.60	5 00
2 to 3 ft., s.	.80	7.00

LIQUIDAMBAR STYRACIFLUA. Sweet Gum.

6 to 12 ins., s.	$ 1.00	$ 8.00
12 to 18 ins., s.	1.25	10.00
18 to 24 ins., s.	2.00	15.00
4 to 5 ft., tr.	30.00	.....
5 to 6 ft., tr.	40.00	.....
6 to 8 ft., tr.	60.00	.....

LIRIODENDRON TULIPIFERA. Tulip Poplar.

6 to 12 ins., s.	$ 0.55	$ 4.50
12 to 18 ins., s.	.70	6.00
18 to 24 ins., s.	1.00	9.00
2 to 3 ft., s.	1.50	12.00
4 to 5 ft., tr.	25.00	.....
5 to 6 ft., tr.	30.00	.....
6 to 8 ft., tr.	60.00	.....
8 to 10 ft., tr.	80.00	.....

PLATANUS OCCIDENTALIS. American Plane Tree.

4 to 5 ft., tr.	$17.50	.....
5 to 6 ft., tr.	25.00	.....
6 to 8 ft., tr.	30.00	.....
8 to 10 ft., tr.	50.00	.....

POPULUS NIGRA ITALICA. Lombardy Poplar.

12 to 18 ins., c.	$ 1.50	$12.00
18 to 24 ins., c.	2.00	15.00
2 to 3 ft., c.	2.50	20.00
5 to 6 ft., tr.	18 00	.....
6 to 8 ft., tr.	25.00	.....
8 to 10 ft., tr.	30.00	.....

PRUNUS AMERICANA. American Plum.

2 to 3 ft., tr.	$ 4.00	.....
3 to 4 ft., tr.	6.00	.....
4 to 5 ft., tr.	7.00	.....
5 to 6 ft., tr.	10.00	.....

ROBINIA PSEUDOACACIA. Black Locust.

6 to 12 ins., s.	$0.40	$ 3.00
12 to 18 ins., s.	.60	5.00
18 to 24 ins., s.	.70	6.00
2 to 3 ft., s.	1.00	8.00
3 to 4 ft., s.	1.50	12.00

ULMUS AMERICANA. American Elm.

6 to 12 ins., s.	$0.50	$ 4.00
12 to 18 ins., s.	.70	6.00
18 to 24 ins., s.	1.00	8.00

ULMUS PUMILA. Chinese Elm.

6 to 12 ins., s.	$0.40	$ 3.00
12 to 18 ins., s.	.60	5.00
18 to 24 ins., s.	1.00	8.00
2 to 3 ft., s.	1.25	10.00
3 to 4 ft., s.	2.00	16.00

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By J. H. H. Boyd

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McMINNVILLE, TENNESSEE

J. R. Boyd
President

here again the results were negative. The solution was applied in tests both to the rooting medium and as deferred treatment to cuttings (the cuttings being removed from the medium after a certain period and having the basal ends placed in the solution for a time). The treatment was in conjunction with root-inducing substances (indolebutyric acid) and the differences in rooting followed the use of the so-called plant hormones and not the vitamin. There was some evidence that the vitamin acted as an activator for the indolebutyric acid, but this is true of other substances, too.

Information such as this will help us nurserymen explain to the customer that it was the water that was applied with the vitamin B_1 that made the fertilizer applied some time ago go into solution and made the plant grow, or that all the vitamin B_1 in the world won't bring back the starved and neglected plant.

E. S. H.

VIBURNUM CASSINOIDES.

One of the most interesting and useful of all the viburnums is Viburnum cassinoides, the withe rod. It is not used so much as its good features warrant. Native of the territory from Newfoundland to Manitoba and Minnesota and south to North Carolina, this medium-size shrub of about six feet forms a compact, rounded mass at maturity. The plant is beautiful in branching habit, foliage, flower and fruit. The leaves are about three inches long, dark green and nearly entire. The fall foliage color is reddish-purple.

White flowers are produced in June and are followed by an abundance of fruit in the fall. Pink, blue and black fruits are found on the same plant, even within the same cluster, denoting various stages of maturity. Few plants are more beautiful in fruit.

The withe rod is not particular as to soil or exposure. It will do well in moist or relatively dry soil and will stand either sun or shade. Propagation is by cuttings or from seeds.

Uses of this plant include specimen and screen plantings. It has been used as a hedge plant and it is fairly satisfactory. If you have good specimens of this plant available, they should be in demand.

L. C. C.

OBITUARY.

Sir Arthur W. Hill.

Sir Arthur William Hill, 66, director of Kew Gardens, London, was killed in a riding accident in Surrey, November 3. He was lecturer on botany at Cambridge University before his appointment as assistant director at Kew in 1907, becoming director in 1922. He was awarded the Veitch gold medal by the Royal Horticultural Society in 1937.

TALKING THINGS OVER.

At the summer meeting of the Maryland Nurserymen's Association a group of leaders talking things over between sessions was snapped by a photographer. The group in the illustration herewith includes, from left to right, William C. Price, Towson Nurseries, Towson; Daniel Shipley, Shipley's Nurseries, Loch Raven; Jesse E. Stoner, Westminster Nurseries, Westminster; C. Warner Price, Towson Nurseries, and P. Donofrio, D. & C. Hardy Plant Nursery, Westminster.

Talking Things Over at Maryland Meeting.

ROSE REGISTRATIONS.

The American Rose Society's registration committee has approved applications for registration of the following roses. Notice of these registrations has been sent to rose organizations in foreign countries and trade papers. If no objections are raised before December 11, 1941, the registration of these names will become permanent as of that date, states R. Marion Hatton, secretary.

Miss Clipper. Hybrid tea. Cross of Angele Pernet x President Hoover, originated by Dr. W. E. Lammerts, Ontario, Cal., to be introduced by Armstrong Nurseries, Inc., Ontario. Plant is described as upright, vigorous, with glossy foliage, long-pointed to urn-shaped buds, flower cupped at first, then flat, three and one-half to four inches across, thirty-five to forty petals. Color bittersweet-pink, with yellow margin and lemon-chrome base. Strong spicy fragrance. Claimed to be distinctive in color and outstandingly fragrant.

Climbing Golden Rapture. Climbing hybrid tea. Said to be a sport of Golden Rapture (Geheimrat Duisburg), discovered by H. C. Swim, Ontario, Cal., to be introduced by Armstrong Nurseries, Inc. Plant described as a strong climber, with long-pointed to urn-shaped buds and flat flowers three and one-half to four inches across, fifteen to twenty petals. Color near Pinard-yellow. Fragrance a combination of tea and spice. Borne singly, and blooms freely and intermittently in May and June.

Climbing Charlotte Armstrong. Climbing hybrid tea. Said to be a sport of Charlotte Armstrong, discovered by T. J. Morris, San Fernando, Cal., to be introduced by Armstrong Nurseries, Inc. Plant described as a vigorous climber, with long-pointed buds and loose, informal flowers three and one-half to five inches across, with thirty to thirty-five petals. Color spectrum-red to cerise. Moderate spicy fragrance. Said to be a continuous bloomer.

Climbing Picture. Climbing hybrid tea. Said to be a sport of Picture, discovered by H. G. Swim, Ontario, Cal., to be introduced by Armstrong Nurseries, Inc. Plant described as a vigorous climber twelve to fifteen feet, urn-shaped buds opening to high-centered flowers three and one-half to four inches across, with twenty-five to thirty petals. Color between Thulite-pink and begonia-rose. Moderate spicy fragrance. Blooms continuously during May and June.

Orange Everglow. Large-flowering climber. Said to be a sport of Copper Glow, discovered by The Brownells, Little Compton, R. I., to be introduced by Walter D. Brownell, Little Compton. Plant described as a hardy everblooming climber, with pointed buds and recurled flowers three and one-half to four inches across, with about thirty-five petals. Color orange. Fragrant. Blooms in clusters continuously from June to November.

Edith Willkie. Hybrid tea. Seedling of Joanna Hill x R. M. S. Queen Mary, originated by the Joseph H. Hill Co., Richmond, Ind., to be introduced by that company. Plant described as upright, with large leathery foliage, long-pointed buds, full flowers loosely rolled outward, four and one-half to five inches across, twenty-five to thirty-five petals. Color Orient-pink, slight tea fragrance. Blooms singly.

Mrs. Jeannette G. Leeds. Hybrid tea. A seedling of Joanna Hill x R. M. S. Queen Mary, originated by the Joseph H. Hill Co., to be introduced by that company. Plant described as upright, compact, with abundant, large, leathery foliage; short-pointed bud, and open full flowers, loosely rolled outward, five to six inches across, fifty to sixty petals. Color Venetian-pink. Slight tea fragrance. Blooms singly.

Lucile Supreme. Hybrid tea. A sport of Lucile Hill, discovered by the Joseph H. Hill Co., to be introduced by that company. Upright plant with large, leathery foliage, long-pointed buds opening full and loosely rolled outward. Flowers average six inches across, with twenty-five to thirty-five petals. Color rose-red. Slight tea fragrance. Blooms singly.

King Midas. Large-flowering climber. A seedling of two unnamed climbing seedlings, originated by the late Dr. J. H. Nicolas, to be introduced by the Jackson & Perkins Co., Newark, N. Y. Plant described as a vigorous climber, with leathery, dark green foliage, free and hardy. Ovoid buds, cupped to open flowers three and one-half inches across, with twenty petals. Color yellow. Slight fragrance. Blooms in clusters intermittently during May and June. This rose takes the place of a polyantha originated by Jackson & Perkins Co. in 1937, but never introduced.

Climbing World's Fair. Climbing hybrid tea. A sport of World's Fair discovered by Jackson & Perkins Co., Newark, N. Y., to be introduced by that company. Plant reported as a climber, with medium-size foliage. Hardy. Urn-shaped buds open to cupped flowers four inches across, with eighteen petals. Color velvety carmine to oxblood-red. Scentless. Blooms in clusters continuously from May to November.

SPECIAL OFFER

Azalea Kaempferi Carmen, Purple King, Ledifolia Alba, Lady Lilac and Rosea Hybrids

	100
8 ins.	$ 40.00
10 ins.	50.00
12 ins.	60.00
15 ins.	75.00
18 ins.	100.00

Berberis Julianae

10 to 12 ins., B. R.	15.00
12 to 15 ins., B. R.	25.00

Buxus Suffruticosa (Dwarf Boxwood)

2 to 4 ins., B. R.	5.00
4 to 6 ins., B. R.	10.00
6 to 8 ins., B. R.	15.00

Cornus Florida (White Dogwood)

2 to 3 ft., B. R.	25.00
3 to 4 ft., B. R.	35.00
4 to 5 ft., B. R.	55.00
5 to 6 ft., B. R.	65.00
6 to 7 ft., B. R.	85.00

Gypsophila Bristol Fairy

3-yr.	15.00

Ilex Crenata Convexa

4 to 6 ins., B. R.	20.00
6 to 8 ins., B. R.	25.00

Ilex Crenata Rotundifolia

8 to 10 ins., B. R.	25.00
10 to 12 ins., B. & B.	40.00
12 to 15 ins., B. & B.	50.00

Ilex Opaca (American Holly)

2-yr., 8 to 10 ins., B. R.	10.00

Ilex Verticillata

18 to 24 ins., B. R.	10.00
2 to 3 ft., B. R.	15.00

Ligustrum Lucidum and Nobile

15 to 18 ins., B. & B.	60.00
18 to 24 ins., B. & B.	75.00

Ligustrum Ovalifolium (Calif. Privet)

2 to 3 ft., B. R.	5.00
3 to 4 ft., B. R.	7.00

Magnolia Kobus

2 to 3 ft., B. & B.	40.00
3 to 4 ft., B. & B.	60.00
4 to 5 ft., B. & B.	90.00
5 to 6 ft., B. & B.	125.00
6 to 7 ft., B. & B.	150.00

Nandina Domestica

2-yr. Seedlings	6.00
12 to 15 ins., B. & B.	30.00
15 to 18 ins., B. & B.	40.00
18 to 24 ins., B. & B.	50.00
24 to 30 ins., B. & B.	60.00

Osmanthus Aquifolium

15 to 18 ins., B. & B.	75.00

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HILLENMEYER'S HUNDREDTH.

Celebrating the one hundredth anniversary of the firm, Hillenmeyer's Nursery, Lexington, Ky., has issued an especially handsome retail catalogue, and bound in the center is an insert of eight pages telling the history of the enterprise. Much of this, especially as regards the generations of Hillenmeyers, appeared in the account in these columns at the time the Southern Nurserymen's Association met at Lexington last fall to honor this celebration.

The present office has an interesting history. A cotton factory built by Colonel Lewis Sanders, sold later to Warfield Brand & Co., was purchased about 1828 by Oldham-Todd & Co. Robert Todd, of this firm, was the father-in-law of Abraham Lincoln. Mary Todd went to Springfield, Ill., in the fall of 1830 to visit her sister, Elizabeth, and November 4, 1842, married Abraham Lincoln. Five years later, on his way to Congress, Mr. Lincoln spent a month at Lexington and at that time and later was in the office which is now that of the Hillenmeyer Nurseries. The cotton mill failed to prosper after Mr. Todd's death, in 1849, and subsequently the establishment was converted into a distillery, operated by Stoll, Clay & Co. After that firm had sold its interests, the old factory, then in bad condition, was torn down. Since the distillery company had to build larger and more modern quarters, the property was sold in 1915 to Louis E. and Walter W. Hillenmeyer. After renovation, the historic office was occupied by the Hillenmeyer Nurseries, and the distillery warehouse became its storage house.

ENLISTING in the Marine Corps reserve for the duration of the national emergency, John F. O'Leary, of the Claremont Nurseries, West Claremont, N. H., is now stationed at Paterson, N. J.

ARTHUR E. THATCHER, for some years superintendent at the Arnold Arboretum, Jamaica Plain, Mass., then manager of the Mount Desert Nurseries, Bar Harbor, Me., and until recently in charge of the William H. Vanderbilt estate near Newport, R. I., has bought a home and land at Hulls Cove, Bar Harbor, where he plans to grow unusual hardy material, including rock plants.

SEEDS 1941 Crop

NOW READY FOR DELIVERY

Prices f. o. b. New York.

	¼ lb.	1 lb.
Abies balsamea	$ .50	$1.75
" nobilis	1.25	4.50
Acer dasycarpum	.25	.70
" ginnala	.45	1.50
" rubrum	.45	1.50
Æsculus octandra	....	.25
Aleurites fordi, Tung-oil Tree	.25	.70
Alnus maritima	.50	1.75
Ampelopsis quinquefolia, d.b.	.45	1.50
" tricuspidata, c.s.	.55	1.85
Araucaria excelsa, per 100 seeds, $2.00; per 1000 seeds, $15.00.		
Aristolochia tomentosa	.55	1.85
Aronia arbutifolia, d.b.	.35	1.25
Azalea calendulacea, c.s., ½ oz., 90c		
" kaempferi, c.s., ½ oz., $1.00		
" mollis, c.s., per oz., $1.40		
" poukhanensis, c.s., ¼ oz., $1.00		
" schlippenbachi, c.s., ¼ oz., $1.00		
Berberis thunbergi, c.s.	.70	2.50
" " atropurpurea, c.s.	4.40	16.00
Betula nigra, c.s.	.50	1.75
Calycanthus floridus	.50	1.65
Caragana arborescens	.25	.80
Casuarina cunninghamiana	2.75	10.00
" stricta, per oz., $1.25		
Ceanothus americanus	.55	1.85
Celastrus scandens, c.s.	.80	2.75
Cercis canadensis	.30	.95
Chionanthus virginica, c.s.	.45	1.50
Cladrastis lutea	.65	2.25
Clematis paniculata, c.s.	.85	3.00
Cornus alternifolia, d.b.	.50	1.80
" florida, c.s., washed	.30	.95
" kousa, c.s.	.80	2.75
Corylus avellana	.25	.65
Cotoneaster horizontalis, c.s.	1.80	6.50
Crataegus coccinea, c.s.	.45	1.50
Cupressus arizonica	.90	3.25
" glabra	.90	3.25
" macrocarpa	.85	3.00
Cytisus scoparius	.85	3.00
Diospyros virginiana	.25	.70
Elæagnus angustifolia, d.b.	.25	.50
" argentea, c.s.	.35	1.25
Epigæa repens, per ⅛ oz., $1.25		
Eucalyptus rostrata	1.80	6.50
Fraxinus americana	....	.45
" lanceolata	....	.25
" quadrangulata	.45	1.50
" velutina	.90	3.10
Hamamelis vernalis	1.35	4.75
Hicoria cordiformis	....	.25
Koelreuteria paniculata	.65	2.25
Larix leptolepis	1.95	7.00
Magnolia acuminata, c.s.	.45	1.60
" fraseri, c.s.	1.25	4.50
" glauca, c.s.	.55	2.00
" grandiflora	.50	1.75
" soulangeana, c.s.	1.65	6.00
" tripetala	.45	1.60
Morus alba, c.s.	.65	2.25
" " tatarica, c.s.	.45	1.60
Nyssa aquatica	.40	1.40
Parkinsonia aculeata, c.s.	.85	3.00
Paulownia tomentosa	.70	2.50
Photinia serrulata, d.b.	1.05	3.75
Picea glauca albertiana, Black Hills Spruce	2.10	7.50
" pungens (Colo.)	1.25	4.50
" " glauca	1.65	6.00
" sitchensis	1.00	3.50
Pinus albicaulis	2.10	7.50
" banksiana	.90	3.25
" muricata	.90	3.25
" murrayana	1.40	5.00
" ponderosa (Colo.)	.35	1.25
" " (Wash.)	.35	1.25
" resinosa	2.20	8.00
" rigida	.65	2.25
" strobus	.50	1.75
Pistacia chinensis	.65	2.25
Platanus orientalis	.25	.75
Prunus avium, c.s.	.35	1.10
" cerasifera, c.s.	.35	1.10
" serotina, c.s.	.35	1.25
" spinosa, d.b.	.45	1.60
Pseudotsuga douglasi glauca (Colo.)	1.00	3.50
Raphiolepis indica	.95	3.50
Rhododendron cunninghami, c.s. per ⅛ oz., $1.00		
" hybrids mixed, c.s., ⅛ oz., $2.00		
" maximum, c.s., per oz., $1.10		
" ponticum, c.s., per ½ oz., 1.10		
Rhodotypos kerrioides	.70	2.50
Robinia pseudoacacia	.25	.75
Rosa arkansana, d.b.	.50	1.75
" hugonis, d.b.	.90	3.25
" multiflora, thorny, c.s.	.50	1.75
" rugosa, c.s.	.85	3.00
Sambucus pubens, c.s., per oz., $0.25		
Sequoia gigantea	2.35	8.50
" sempervirens	1.00	3.50
Styrax americana	.50	1.75
Swietenia mahogani	1.65	6.00
Taxodium distichum	.35	1.10
Thuja orientalis	1.00	3.50
Viburnum lantana, d.b.	.45	1.60
" rhytidophyllum, c.s.	.70	2.50
Wisteria sinensis, blue	.45	1.50
" " white	.85	3.00

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Texas Nurserymen's Short Course

Meeting during extremely wet weather (four inches of rain fell October 30 at College Station), the nurserymen's short course at Texas A. & M. College convened in the half-empty auditorium of the animal industries building. Many important Texas nurseries were not represented at the 3-day event because of fall business pressure at home, where managers are, in many instances, training foremen who replaced experienced men "caught in the draft."

Dr. T. O. Walton, the college president, graciously delivered to the nurserymen an invigorating address of welcome. The president of the Texas Association of Nurserymen, Clark Kidd, made response.

Dr. J. C. Ratsek gave pointedly practical "Tips on Growing and Handling Nursery Roses." Horticulturist at the Tyler agricultural experiment substation, Dr. Ratsek, with Dr. E. W. Lyle, plant pathologist, educates growers toward the production of better roses.

Explaining briefly the nature of plant growth, stem and foliage development, Dr. Ratsek emphasized Dr. Lyle's findings on the necessity of controlling the fungus known as black spot by regular applications of dust (90 per cent sulphur and 10 per cent Tennesee Copper 34) weekly through the growing season in the nursery. Eliminating the chief cause for unseasonable defoliation, bushes attain desired heavy top growth. Plant food is then stored in reserve for satisfactory transplanting. Methods of application of sulphur-copper dust include scale bellows-type blower, rotary hand duster and power duster on tractor take-off for large field coverage. The air blast should be strong enough to envelop fully both underside and topside of foliage, Dr. Ratsek explained. He also mentioned the Welch-type understock, Rosa multiflora japonica, the principal rose cutting now widely used, and the possibility of the experiment station's No. 620037 understock, which is a Welch-Upright cross and may be resistant to black spot.

For the next day and one-half J. F. Rosborough, college extension horticulturist and general chairman of the short course, divided the nurserymen into three groups to meet alternately with teachers and scientists for discussion periods on three topics, plant materials, culture and design.

S. H. Yarnell, chief of the division of horticulture of the agricultural experiment station, was chairman of the group studying plant materials and presented leading horticultural works in literature, some by book publishing houses and others by Department of Agriculture bulletin. H. B. Parks, of San Antonio, expert on native southwestern plants, explored the field of little-used varieties of red haws, chestnut oak, black alder and many others, with the warning to nurserymen to watch for chances to use thrifty native material.

W. S. Flory, station horticulturist, informed nurserymen on the Ness hybrid oak, a fast and symmetrically growing cross between live oak and overcup. F. R. Brison, of the department of horticulture, gave some answers on growers' propagating problems. Last year's peach seed failure prompted discussion on three causes of loss: (1) Abortive embryo, usually found in early-ripening varieties of peach seed; (2) rest period or faulty storage, which should be for twelve to fourteen weeks at 31 to 41 degrees temperature; (3) seed coat, which in some cases will resist moisture. Test for germination results can be made by fall planting of peach seeds after removing the coat and brown skin. Shalil, Yannan and some other varieties first reported nematode-resistant, when planted under other conditions, are now said to have seventeen to nineteen per cent of seedling peaches infested with nematode. The use of indolebutyric acid for root stimulation on pecan trees, applied by saturated toothpicks inserted in the root (one grain to twenty-one cubic centimeters of alcohol) with inadequate findings and no proved long-term gain, was reported.

Ray Verhalen, Scottsville, gave "Tips on Buying and Handling Lining-out Stock." He explained transplanting methods to protect liners from early wind and cold. He advised buyers of this class of nursery stock that the costliest plants generally were the cheapest to grow. The loss of cheaply purchased material in the nursery usually made it the costliest at the end of two, three or five years.

Ross Wolfe, Stephenville, speaking on "Fruit Varieties and Nomenclature," praised Dr. Flory's informative bulletin on plum varieties graded according to their resistance to canker. He firmly expressed the opinion that many useless kinds of trees are given valuable space in nurseries when they should be discarded from production lists because of inherent weaknesses which make them unfit for orchard use. With newer productive varieties of fruits to advertise, Mr. Wolfe believes nurserymen can safely discard weak and less productive varieties. The reportedly good varieties mentioned were: Plums—Six Weeks, Bruce, Munson, Botan, hybrid plum-cherries in colder climate and Wright; figs — Texas Everbearing; apples — King David, Holland, Delicious and Golden De-

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licious; pears—Kieffer, with Douglas in some areas. An interesting indication of variety changes among fruit growers was found in the Munson Nursery Co. 1888 catalogue, listing fifty-two peach varieties, of which only three are now commercially grown, Mr. Wolfe said. Regarding pecans, he added that varieties Moore, Success, Stuart, Schley and Mahan are successfully planted below about 400 feet elevation, with the western varieties, Burkett, Western Schley and Garner, in use in altitudes over 600 feet in west Texas.

Cameron Siddall, extension service entomologist, was chairman of the second group, studying culture. He first introduced L. G. Jones and S. B. Apple, professor and assistant in agronomy, who, with G. W. Adriance, head of the college department of horticulture, Dr. Ratsek and Robert Mosty, of Mosty Bros. Nursery, Kerrville, explained soil composition and tested sample soils to demonstrate the use of several chemical kits on the market. Among these were products of the LaMotte Laboratories, Baltimore, Md., and the Urbana Laboratories, Urbana, Ill. Mr. Mosty summarized the experience of production on irrigated blackland with pH rating between 8 and 9.

Holding the clinic on insects, S. W. Bilsing, head of the college's department of entomology, blitzed all questioners with rapid-fire "yes" or "no" answers on the control of nursery insect pests. In less than thirty minutes nurserymen got a store of important treatments, with names and addresses of manufacturers, to use against mealy bug, lace bug, pecan case-bearer and many other enemies.

Walter McGregor, experiment station entomologist, brought information on when and how to spray peach orchards for what and with what. Best control of curculio is a spray (two pounds zinc sulphate, four pounds oystershell lime, three pounds sulphur, one pound lead arsenate to fifty gallons of water) used once when petal fall is three-fourths complete and again ten days later. This is followed by another spray to control the spread of peach budworm (one pound lead arsenate, four pounds lime to fifty gallons of water). Another experiment station entomologist, Dr. Fletcher, took over the insect clinic for growers' questions on

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Juniperus virginiana Burkii	3.00	27.50
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Juniperus virginiana globosa	3.00	27.50
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Juniperus virg. pyramidalis	3.00	27.50
Juniperus virg. pyramidiformis	3.00	27.50
Juniperus Sabina Von Ehron	3.00	27.50
Magnolia Alexandrina	3.50	32.50
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Picea pungens Moerheimii	3.50	32.50
Pinus Cembra	3.00	27.50
Quercus Robur fastigiata	4.00	37.50
Thuja occidentalis Douglasii spiralis	2.50	22.50
Thuja oc. elegantissima	2.50	22.50
Thuja. oc. lutea, Geo. Peabody	2.50	22.50
Thuja occidentalis lutea, B. & A. type	2.50	22.50
Thuja occidentalis nigra	2.50	22.50
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eliminating insects affecting ornamental nursery stock, such as thrips, red spider, bagworm and shot-hole borer.

Mr. Siddall then introduced A. A. Dunlap, chief of the division of plant pathology, switching the meeting from insects to plant diseases. Dr. Dunlap reported complaints of euonymus leaf spot, camellia canker and hibiscus fungus, and mentioned the Bordeaux treatment. Closing this group meeting, E. W. Lyle, experiment station pathologist working on roses in the Tyler territory, outlined the control of crown gall—reduced from fifty-three to three per cent in cuttings planted four years apart by between-crop planting of a resistant cover crop. Dr. Lyle exhibited colored slides comparing the rose dusting equipment now used in some Tyler nurseries, contrasting production results in fields using correct and incorrect equipment and methods.

Under the chairmanship of F. W. Hensel, head of the college department of landscape art, the third group, studying design, met in the studio and projection room for a close-up view of student training and for colored movies illustrating the subject. N. W. McInnis, professor of landscape art, and his assistant, E. J. Urbanovsky, criticized the design creations of undergraduates and focused professional attention on unusual abilities shown in classwork on architectural landscape layout, construction and pictorial selling.

G. W. Adriance was master of ceremonies at the evening banquet, featuring the Singing Cadets, a large, well balanced glee club, and an appropriate speaker, recently home from a Central American good-will trip as agricultural representative of the United States, who described common Pan-American ornamental and fruiting trees.

The last half day of the short course was led by C. C. McClung, Corsicana, who introduced Jennie Camp, specialist in home production planning, of the college extension service. The topic, "Fruits for Health," was appetizingly presented. From the department of accounting and statistics, H. A. Dulan brought "Essentials of an Accounting System," and quickly presented the high spots of bookkeeping, a subject glaringly neglected by many nurserymen. Then S. M. McKinnon, of the department of agricultural economics, suggested proved salesmanship principles and brought lessons of large-scale advertisers. After a film on "The Modern Way" of selling was projected, by courtesy of the du Pont company, Mr. McClung received cards from the nurserymen listing the suggestions for planning the next Texas nurserymen's short course. These mainly included request for change of date from the fall's busy digging and shipping season to an earlier fall or late spring date and topics for future discussion or study.

Those probably due most credit for organizing this valued forum included J. F. Rosborough, general chairman; G. W. Adriance and S. H. Yarnell, program planners, and Howard Locke, of the New Braunfels Nursery & Floral Co., who was chairman of the Texas Association of Nurserymen's short course committee.

TEXAS FELLOWSHIP.

The only fellowship in the United States where students themselves furnish the honorarium was announced by members of the Landscape Art Club of the Texas agricultural and mechanical college, College Station, at the first meeting of that organization last month.

The F. W. Hensel fellowship honors the founder and present head of the college landscape art department. It will provide $500 per annum to a member of the graduating class in the landscape art department selected by his fellows and a faculty committee. The only requirement will be that the student pursue advanced studies in landscape art.

Money for the fellowship will be provided by sale of flowers in corsages and bouquets to A. & M. cadets on the campus during the school year. Members of the Landscape Art Club will make the corsages and bouquets and sell them, being paid for their time, and the flowers will be purchased from Texas florists.

Mr. Hensel, in his twenty-seventh year at the Texas college, has been head of his department since its establishment in 1926, having graduated in the class of 1907. He attended Cornell University to obtain his master of science degree in 1913 and has been on the Texas faculty since his return in 1914.

NEW GURNEY COMPANY.

Gurney's Inc., a new South Dakota corporation, purchased from Mrs. Nancy W. Gurney the real and personal property of the House of Gurney, Inc., which she purchased from the trustee in bankruptcy, as reported in the preceding issue, for $10,000 subject to encumbrances and taxes totaling about $142,700. The new company began operation of the business at Yankton, S. D., November 1.

The officers of the new corporation are: President, Charles H. Gurney; vice-president, George W. Gurney; secretary, Agnes Madsen. The directors, in addition to the officers, are Mrs. Nancy W. Gurney, J. Burke Schriver and Russell L. Rulon.

The last two are moving from Shenandoah, Ia., where they were connected with the Henry Field Seed Co. J. Burke Schriver is to be sales manager and head of the field seed department, and Russell Rulon is to manage the garden seed department, succeeding Don Gurney.

According to Charles H. Gurney, the business of the new corporation will be confined entirely to seeds and nursery stock, with emphasis on the wholesale phase.

No other bid was made for the

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business, and October 30 the trustee's sale was confirmed to Mrs. Gurney, whose husband, Charles H. Gurney, as treasurer of the old firm, filed a petition in bankruptcy September 17.

The trustee will hold the $10,000 cash until April, 1942, up to which time creditors may file claims. Depending upon the expenses of the case and the number and amount of claims filed, there will be a dividend of about six or seven and one-half per cent, it is reported. About 200 claims have been filed, out of between 1,400 and 1,500 unsecured creditors.

PLANT HORMONE PATENTS.

October 7, 1941, United States patents No. 2,258,291 and No. 2,258,292 were issued to the American Chemical Paint Co., Ambler, Pa., as assignee of Franklin D. Jones. The first patent covers a growth-regulating composition for plants containing thiourea with or without a plant hormone and a method for applying same to plants. The second patent covers a growth-regulating composition for plants containing as an essential ingredient an amide of a plant hormone acid and also covers methods for applying the composition. Certain of the plant growth compositions manufactured by the American Chemical Paint Co., including those identified by the registered trademarks Rootone, Transplantone and Fruitone, are protected by these patents.

CYPRESS WOOD WOOL.

When cypress wood wool was first advertised to the trade in this magazine two years ago by the Excelsior Mills Corp., Jacksonville, Fla., the company at once sold its entire output to some large nurseries, which have been buying in carload quantities. Now that the company again has extra stock available, because of the increased output of the mills, its offer appears once more. The advantage of cypress wood wool for mulching is that it contains no obnoxious weed seeds, such as do hay and straw. It is also useful as dry packing between the tops of perennial plants to keep them from heating, and it is also used for wet packing around roots, since it takes moisture readily, does not pack tight and keeps moist for a long time.

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900	15 to 21 ins.	10	5.00	40.00
250	18 to 24 ins.	10	7.50	....

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Coming Events

ON THE CALENDAR.

The following list of meetings the coming winter includes those whose dates are known to have been set.

Secretaries of other state associations are invited to send announcement of date and place, so that it may be included in the next issue.

November 21, Western Pennsylvania Nurserymen's Association, Roosevelt hotel, Pittsburgh.

December 9 and 10, Minnesota State Nurserymen's Association, Lowry hotel, St. Paul.

January 6 to 8, Western Association of Nurserymen, Muehlebach hotel, Kansas City, Mo.

January 7 and 8, Ohio Nurserymen's Association.

January 9 and 10, Nebraska Association of Nurserymen, Capital hotel, Lincoln.

January 13 to 15, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 21 and 22, Indiana Association of Nurserymen, Antlers hotel, Indianapolis.

January 21 and 22, Oklahoma State Nurserymen's Association.

January 27 and 28, New Jersey Association of Nurserymen, Hotel Hildebrecht, Trenton.

January 28 and 29, Michigan Association of Nurserymen, Hotel Hayes, Jackson.

January 29, Oregon Association of Nurserymen, Heathman hotel, Portland.

PLAN ILLINOIS PROGRAM.

The directors of the Illinois State Nurserymen's Association, meeting at Chicago, November 7, laid plans for a program of exceptional interest for the annual convention, to be held at the Hotel La Salle, Chicago, January 13 to 15.

The regional meeting of the American Association of Nurserymen will be included in the session on the first afternoon. The executive committee of the A. A. N. will hold its midwinter meeting at Chicago during the few days prior to the Illinois meeting. They will be present to discuss the important projects under way in connection with national defense, as well as other trade matters.

The second afternoon session is to be concerned with landscaping. Individuals engaged in this business in the Chicago area are to be invited, and in the evening they will be entertained at a buffet supper by a score of local nurserymen, members of the association, who will decorate the room usually devoted to exhibits, so they may meet their guests there.

At the final session there will be the usual luncheon, one or two good speakers and transaction of association business. The Illinois association does not hold morning sessions, leaving that part of the day open for the numerous representatives of out-of-state firms to do their trading.

OKLAHOMA DATES SET.

The date for the convention of the Oklahoma State Nurserymen's Association, as fixed by the executive committee, is January 21 and 22, 1942.

This date was set to accommodate the plans of Edwin J. Stark, president of the American Association of Nurserymen, who has promised to attend.

Invitations are being sent to presidents of other state groups to come and meet here with Mr. Stark.

J. A. Maddox, Sec'y.

KANSAS PROGRAM.

George W. Kinkead, secretary, has announced a tentative program for the joint meeting of the Kansas State Horticultural Society and the Association of Kansas Nurserymen, which will be held December 4 and 5 at Lawrence, Kan. An outline of the parts of the program of interest to nurserymen follows:

THURSDAY MORNING, DECEMBER 4.

"The Damage to Fruit Plants Caused by the Freeze of November, 1940," by Dr. G. A. Filinger and Dr. W. F. Pickett, Kansas State College.

"Small Fruits," by Ezra E. Shields,

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Aldenhamensis, red .....4 to 5 ft.
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Atropurpurea, red .....4 to 5 ft.
Atrosanguinea, carmine .....4 to 5 ft.
Baccata, white ...4 to 5 ft. and 5 to 6 ft.
Baccata Frucki, white.....4 to 5 ft.
Coronaria, pink ...4 to 5 ft. and 5 to 6 ft.
Dolgo, white .....4 to 5 ft. and 5 to 6 ft.
Eleyi, red .....4 to 5 ft. and 5 to 6 ft.
Floribunda, pink .4 to 5 ft. and 5 to 6 ft.
Floribunda Peachblow, pink .....4 to 5 ft. and 5 to 6 ft.
Hopa, red .....4 to 5 ft. and 5 to 6 ft.
Ioensis .....4 to 5 ft. and 5 to 6 ft.
Ioensis Fiore's Improved, pink .....4 to 5 ft. and 5 to 6 ft.
Matthew, pink .....4 to 5 ft.
Niedzwetzkyana, red .....4 to 5 ft.
Prunifolia Rinkii, pink .....4 to 5 ft. and 5 to 6 ft.
Robusta .....5 to 6 ft.
Scheideckeri .....4 to 5 ft.
Snowbank, white..4 to 5 ft. and 5 to 6 ft.
Zumi calocarpa, white .....4 to 5 ft. and 5 to 6 ft.

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Wathena, and Paul Shepard, Mountain Grove, Mo.

"Peach Culture," by H. L. Drake, Bethel, and Emmett Blood, Wichita.

"Contour Planting and Terracing," by John T. Bregger, project supervisor, orchard erosion investigations, United States Department of Agriculture.

"Marketing," by Earl R. French, Rochester, N. Y.

"Oriental Fruit Moth," by Dr. H. B. Hungerford, University of Kansas, and Prof. George A. Dean, Kansas State College.

THURSDAY AFTERNOON, DECEMBER 4.

"Causes and Control of Chlorosis," by Dr. Harold Myers, Kansas State College.

"Cedar Blight," by Dr. Ernest Wright, associate pathologist, United States Department of Agriculture, Omaha, Neb.

"Build Kansas," by Mrs. Renna Hunter, Industrial Development Commission, Topeka.

"Newspaper and Radio Advertising," by John W. Sarber, Topeka.

FRIDAY MORNING, DECEMBER 5.

"Vegetables in National Defense," by W. G. Amstein, Kansas State College.

"Hardy Framework for Apple Trees," by Robert M. Clark, Mitchellville, Ia.

"A Review of Existing Orchard Conservation Practices in United States Fruit Regions," by John T. Bregger.

Discussion on varieties of fruits for future planting.

THREE NEW LILACS.

Three new lilacs are being introduced this year by W. B. Clarke & Co., San Jose, Cal. These mark the results of eight or nine years of work on lilac breeding.

One is a single purplish-blue with large flowers, borne freely in unusually large clusters, which has been named Kate Sessions. It is the earliest named variety known to the originators.

Alice Eastwood, named for the San Francisco botanist, has double pink flowers borne in beautiful elongated clusters. This is said to be somewhat on the order of Katherine Havemeyer and President Poincare, but has the distinction of having the flowers spaced more freely in the cluster.

Blue Hyacinth is appropriately named. The tubes of the flowers are long and slender, while the strap-shaped lobes are so extremely long that the best flowers would be one and one-half or one and three-quarters inches across if the lobes were straightened out.

The firm is planning its annual lilac show next spring and may find it practical to give two showings, so that early and late varieties may be exhibited. G. K. A.

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900	**Ash, Green,** 8 to 10 ft.	55.00
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300	**Crab, Flame,** 5 to 6 ft.	40.00
600	**Crab, Hopa,** 5 to 6 ft.	40.00
3000	**Elm, American,** 1½ to 2-in. cal.	80.00
1500	**Elm, American,** 2 to 2½-in. cal.	115.00
1200	**Elm, American,** 2½ to 3-in. cal.	140.00
800	**Elm, American,** 3 to 3½-in. cal.	185.00
300	**Elm, Chinese,** 6 to 8 ft.	35.00
300	**Elm, Chinese,** 8 to 10 ft.	50.00
900	**Elm, Chinese,** 1½ to 2-in. cal.	80.00
700	**Elm, Chinese,** 2 to 2½-in. cal.	115.00
400	**Elm, Chinese,** 2½ to 3-in. cal.	125.00
100	**Elm, Chinese,** 3 to 3½-in. cal.	200.00
600	**Hackberry,** 4 to 5 ft.	25.00
700	**Hackberry,** 5 to 6 ft.	35.00
300	**Linden, American,** 2 to 2½-in. cal.	135.00
800	**Linden, American,** 2½ to 3-in. cal.	160.00
600	**Linden, American,** 3 to 3½-in. cal.	225.00
200	**Linden, American,** 3½ to 4-in. cal.	275.00
400	**Russian Olive,** 6 to 8 ft.	35.00
300	**Russian Olive,** 8 to 10 ft.	50.00
1000	**Walnut, Black,** 6 to 8 ft.	30.00
1000	**Walnut, Black,** 8 to 10 ft.	40.00
500	**Walnut, Black,** 10 to 12 ft.	60.00

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New Books and Bulletins

BIBLE PLANTS.

An exhibit by the New York Botanical Garden of some of the plants mentioned in the Bible, at the International Flower Show last spring, drew much public attention. Interest in the subject will be further met by a book of 200 pages by Eleanore Anthony King, "Bible Plants for American Gardens," just published by the Macmillan Co., at $2.

The large number of plants mentioned in the various books of the Bible provide plenty of material for those interested in research on the subject. Interpretation of the spiritual meaning of some verses is aided by knowledge of the plant mentioned, particularly since the names used in the English translation at first sight indicate something else than the plant revealed by research. The "lily of the field," for instance, is not the Madonna lily, but the poppy-flowered anemone. The apple is actually an apricot, and the chestnut is really the Oriental plane tree.

Some explanation lies in the fact that the translators of the Bible into English were of a northern latitude, while Palestine is in the latitude of South Carolina and northern Florida, Jerusalem approximating the position of Jacksonville.

From that fact it may be inferred that most of the plants mentioned in the Bible are more likely to be planted successfully in the south than in northern gardens. Nevertheless, the author of this book, besides presenting much interesting information about the context in which the plants are mentioned in the Bible—a long list—gives some description of those accurately identified and tells how they may be used in the garden or possibly as house plants.

GARDEN ANSWERS.

One of the most popular books for amateur gardeners for some years has been "1001 Garden Questions Answered," by Alfred Carl Hottes, widely known for his lectures and writings on garden topics. The third revised edition of the book has just been published by the A. T. De La Mare Co., at $2.50.

The contents of the 388 pages cover the amateur's garden, from annuals to trees, omitting fruits and vegetables. There are 147 half-tone and line cut illustrations. The book has been well revised and has been reset in a larger, more readable type than earlier editions. For those simple questions of the amateurs it is ready with the answers.

"GARDENER'S HANDBOOK."

A comprehensive manual of gardening for the amateur, the "Gardener's Handbook," by Dr. L. H. Bailey, has been a popular book with the public since it was issued in 1934. Because of the success of the original edition, the volume has been reissued in the Imperial edition at $1.49, or half its former price, by the Macmillan Co.

In alphabetical order, plants of the common garden kinds are briefly treated, as to cultivation and use, in the 292 pages that compose the book.

"GARDENER'S THIRD YEAR."

After giving advice on growing annuals in "The Gardener's First Year" and in discussing perennials and bulbs in "The Gardener's Second Year," Alfred Bates undertakes further education in "The Gardener's Third Year," dealing with trees, vines and shrubs. This volume of over 300 pages has just come from the press of Longman, Green & Co., at $2.50.

The latest volume goes back to beginnings by, first of all, discussing different types of gardens and their planning, a brief introduction into landscape design. Then are taken up the different types of woody plants, how to order them and how to plant them on arrival from the nursery. Chapters on the various phases of garden care complete the first two-thirds of the book. The latter third comprises brief descriptions of a liberal list of ornamental vines, shrubs and small trees.

The book is written for the beginner in the garden and on that account goes into lengthy explanations of both major and minor points.

BULLETINS RECEIVED.

"The Propagation of Some Trees and Shrubs by Cuttings," by William L. Doran, research professor of botany, bulletin 382 of the Massachusetts agricultural experiment station, Amherst, contains detailed information regarding recent developments in plant propagation. After an introductory review of the various practices, the greater portion of the 56-page bulletin summarizes results with

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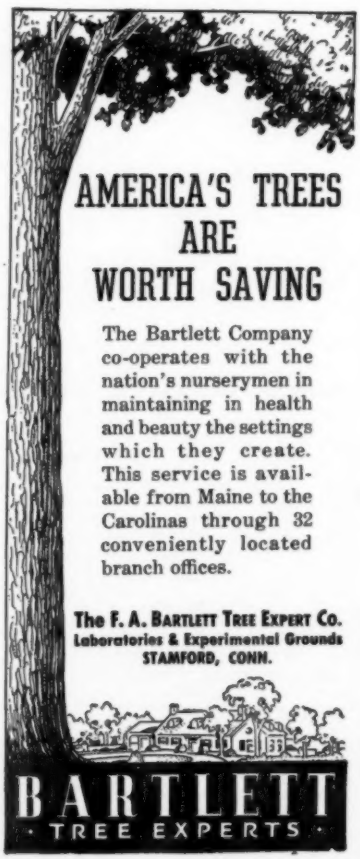
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many species, a paragraph being devoted to each.

The twelfth report, covering the year 1940, of the Central States forest experiment station, Columbus, O., occupies fifty-six closely typewritten pages in mimeographed form and reviews the research activities of the station during the past year while redesigning plans for further research in forest management and economics.

"Production and Agricultural Use of Ammonium Sulphate," by C. C. Fletcher, Albert R. Merz and B. E. Brown, circular 578 of the United States Department of Agriculture, Washington, D. C., explains the use of ammonium sulphate as a nitrogenous fertilizer in relation to crop production and its use in greenhouses, for lawns and in preparation of composts. Since there are few natural deposits of this chemical, short discussions are given of its commercial production.

"Effect of Hormodin A, a Growth Substance, on the Rooting of Cuttings," by Marcus A. Maxon, B. S. Pickett and H. W. Richey, a 48-page booklet issued as research bulletin 280 by the Iowa agricultural experiment station, Ames, describes experiments on herbaceous, green wood, evergreen and hardwood cuttings. Numerous tables and half-tone illustrations show the results of various tests.

Entitled "What's New in Farm Science," part two of the fifty-seventh annual report of the director of the Wisconsin agricultural experiment station, Madison, is an attractively printed bulletin, No. 451, of 112 pages and cover, presenting in a series of short articles the developments in research in Wisconsin in field crops, insect pests, plant diseases, soil fertility and garden, orchard and cash crops, in addition to livestock feeding and poultry.

NEW PLANT PATENT.

The following plant patent was issued November 4, 1941, according to Rummler, Rummler & Davis, Chicago patent lawyers:

No. 492. Weigela plant. Alexander Cumming, Bristol, Conn., assignor to Bristol Nurseries, Inc., Bristol, Conn. A new and distinct variety of weigela plant characterized particularly by its hardy, robust and balanced growth; its habit of blooming with even distribution of blooms; its particularly rich, green foliage, and its flowers of distinctive color of a soft, pleasing shade of red.

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Diseases of Trees

Gleanings from the Latest Reports of Scientific Research

By Leo R. Tehon

CURRENT RESEARCH ON THE PACIFIC COAST.

The Pacific division of the American Phytopathological Society met at the California Institute of Technology, at Pasadena, from June 18 to 21, and twenty-nine papers were read dealing with plant disease research. Among these, several dealt with problems important to nurserymen.

That the shoestring root rot fungus can actually invade and produce disease in healthy trees has been seriously questioned by some plant pathologists. Bearing on this, Dr. Donald E. Bliss reported the results of experiments made with pure laboratory cultures of the fungus. He found that infection could be obtained by means of rhizomorphs—the shoestrings — only when they were attached to a suitable substratum. When detached from the substratum, they were noninfective. When pure cultures of the fungus, growing on nutrient agar, bran and wood, were placed in soil about citrus roots, only the cultures on wood produced infection. Infection was possible from both naturally and artificially infected wood. The best transmissions of infection were obtained when cultures of the fungus were grown on sterile pieces of citrus roots. The rhizomorphs, or shoestrings, developed in soils of widely different types and pH reactions; they penetrated rotted manure, but apparently did not use it as a source of food. In twelve months they grew to a depth of over two feet in nutrient agar, but if air was excluded from the agar surface they stopped growing immediately and the fungus died. The California pepper tree, Schinus molle, became infected after seventy-one days in relatively moist soil at a temperature of about 68 degrees.

Research on virus diseases of peach in Idaho, reported Dr. Earle C. Blodgett, has resulted in the recognition of still other viroses. A peculiar disease seen in 1938 has been named wart. Warty outgrowths occur on the fruits, particularly near the distal end, but there are no general tree or foliage symptoms. When buds from warty trees are placed (grafted) on healthy trees, the fruit on the stock then shows the disease. A disease characterized by a mottle pattern on the foliage, known in Idaho since 1939, is regarded as different from mosaic and is being called peach mottle. In budding tests this disease was easily transmitted to healthy peach trees. When buds from infected trees were set on healthy Bing cherry, a condition similar to cherry mottle leaf developed. And when infected peach buds were set on healthy Montmorency cherry, the stock trees exhibited severe dieback of the current growth. A peach disease common in Idaho orchards, which causes yellowing of the foliage and, usually, necrosis of leaf tissue and defoliation, is being regarded as a virus infection similar to the X-disease.

An account of a new and severe virus disease of peach in California was given by L. C. Cochran and Lee M. Hutchins. The disease, which they call ring spot from a characteristic mottle pattern developed on the leaves, attacks J. H. Hale and Late Elberta in the orchard, causing twig blight and severe dieback associated with spotting and cankering of the current growth. In a second year, infected trees may show no symptoms. Buds taken from diseased trees transmit the malady so readily, however, that within two months of budding the stock trees show all the symptoms and also may later exhibit severe twig girdling and severe splitting and furrowing of the bark on the trunks. By budding the disease has been transmitted to nursery trees of Ne Plus Ultra almond, Myrobalan plum, and Mahaleb and Mazzard cherry. From other transmission tests, these men state that there is in existence in California a group of stone fruit tree viruses capable of producing ring spots and symptoms in peach comparable to those described for this ring-spot virosis.

Symptoms on citrus resulting from deficiencies or excesses of nutrient materials in the soil were discussed by L. J. Klotz and J. C. Johnston. Vein chlorosis of the leaves, they state, results from root injuries such as those caused by girdling and drowning. Nitrogen starvation shows as a general yellowing of the leaf. Iron deficiency shows as a progressive, general yellowing of the leaf blade with retention of green along the veins until the leaves are nearly white and show burning. Copper deficiency may show in a variety of ways; for example, as gum pockets at leaf nodes, by the formation of resinous excrescences on twigs and on elongated leaves and fruit, by the deposit of gum in the angles of fruit segments and by the appearance of multiple buds, staghorn growth and S-shaped terminals. Zinc deficiency shows as an irregular yellowing between the lateral veins of the leaves and, if the deficiency is severe, by undersize leaves, pale coarse fruit, multiple buds and dieback. With manganese deficiency the leaves are full-size but light green between the veins and frequently bear small,

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Chokeberry, Black, 12 to 18 ins.	40.00
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Lonicera Fragrantissima, 18 to 24 ins.	45.00
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Weigela Rosea, 2 to 3 ft.	75.00
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350	**American White Elm,** 1¾ to 2 ins.	$ 80.00
800	**Green Ash,** 6 to 8 ft.	30.00
500	**Soft Maple,** 1½ to 1¾ ins.	90.00
1000	**Chinese Elm,** 8 to 10 ft.	50.00
500	**Lombardy Poplar,** 8 to 10 ft.	20.00
400	**Weeping Willow,** 10 to 12 ft.	60.00
600	**Red Oak,** 6 to 8 ft.	100.00
600	**Redbud,** 5 to 6 ft.	35.00
300	**White Birch,** 8 to 10 ft.	135.00

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Cornus florida rubra, 2 to 3 ft., **80c;** 3 to 4 ft., **$1.00;** 4 to 5 ft., **$1.50;** 5 to 6 ft., **$2.00.**

Above prices are for B&B. If wanted NR, 10% less.

Red-leaved Barberry, 15 to 18 ins., **12c;** 18 to 24 ins., **15c.**

Green-leaved Barberry, 15 to 18 ins., **10c;** 18 to 24 ins., **12c.**

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circular, chlorotic spots. Boron deficiency kills terminal twigs, splits the bark, causes translucent areas to appear in young leaves, causes mature leaves to be curled, brittle and brownish-green and to have split, corky veins on the upper surface; it also results in flower and fruit abscission. Excess boron, on the other hand, causes the leaf tips and margins to turn golden-yellow and die and causes circular resinous spots to appear on the upper leaf surfaces. In general, soil alkalinity (high pH) tends to decrease the availability to the roots of the minor food elements and results in retardation of growth.

Both the bud tissue of the Valencia orange and the virus that causes citrus psorosis are highly resistant to heat, reported Dr. H. S. Fawcett and L. C. Cochran, of California. Between 1936 and 1940, in five separate trials, twigs of Valencia orange suitable for use as bud sticks were immersed in water and held at different temperatures. Some of these twigs were from trees affected with psorosis, the other from healthy trees. Growth of these buds indicated that psorosis affected buds could endure 140 degrees for one minute, 130 degrees for five minutes, 120 degrees for one hour and 110 degrees for ten hours and still transmit the disease. Thus heat treatment of bud sticks does not seem likely to prove of direct value in the control of citrus psorosis.

Pierce's disease of grapevines, which in 1938 was found transmissible by grafting, was reported by William B. Hewitt to be the same as the Anaheim, or California vine disease. This malady was first reported in southern California, near Anaheim and North Pomona, in 1884. By 1895 it had spread to most of the southern California vineyards and destroyed nearly 30,000 acres of vines. During this period it was reported also in the Napa, Livermore and northern Sacramento valleys, but was not so destructive as in the southern part of the state. Probably, however, it was not the cause of the widespread death of vines which occurred in the Santa Clara valley from 1887 to 1901. It is probable that this disease was relatively inactive in California from 1900 until it began in 1920 to be important again in the San Joaquin valley.

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by a fungus known as Chalaropsis thielavioides (this is the disease known to greenhouse rose growers in the east as the Manetti mold disease) was important in California in 1940, reported Kenneth F. Baker and H. Earl Thomas. During the dry summer months of that year, it largely prevented successful union of rose bud shields with Manetti and odorata rootstocks in commercial fields in the Santa Clara valley. In repeated trials, it quickly killed and blackened the buds, but made only a limited discoloration on the rootstock. In laboratory tests the fungus was found pathogenic to stems of Rosa odorata, R. chinensis var. Manetti, R. multiflora, R. longicuspis, R. nutkana, R. californica, R. gymnocarpa, sweet cherry, peach, almond, black and Persian walnut, pear and Prunus mariana. It also grew slightly on orange and quince stems and on roots of Ulmus pumila. However, stems of Rosa laxa, apple and numerous collections of the Ragged Robin rose proved immune. Rosa odorata is the most susceptible rootstock; next come Manetti and R. multiflora. The disease is as yet unknown in southern California, where roses are largely of the garden type grown on the immune Ragged Robin rootstocks. Because practically all California-grown rootstocks are budded before being shipped, the problem of control is distinct from that in the east. L. R. T.

CATALOGUES RECEIVED.

[In writing for a copy of any of the catalogues reviewed below, please mention that you saw it described in the American Nurseryman.]

Mosty Bros. Nurseries, Center Point and Kerrville, Tex.—Wholesale list of general stock, mainly evergreens, 20 pages and cover, 4x9 inches.

Kenyon's Nursery, Oklahoma City, Okla.—Wholesale list of general stock, including lining-out stock and grafts, 20 pages and cover, 4x9 inches.

Boyd Nursery Co., McMinnville, Tenn.—Wholesale list of general line of nursery-grown and collected stock, 40 pages and cover, 4x9 inches.

Atlantic Nurseries, Inc., Berlin, Md.—Wholesale list of nursery stock, 4-page mimeographed circular, 8½x14 inches.

Twitty Nursery Co., Texarkana, Tex.—Trade list of general line of stock, 36 pages and cover, 4x9 inches.

Tom Dodd Nurseries, Semmes, Ala.—Price list of nursery stock features azaleas and camellias, 20 pages and cover, 4x9¼ inches.

A. McGill & Son, Fairview, Ore.—Wholesale price list of nursery stock, including fruit trees, 12 pages and cover, 4x9 inches.

EXHIBIT AT PASADENA.

The southern California fall flower show, held October 30 to November 2 at the Fannie E. Morrison horticultural center, Brookside park, Pasadena, was carried out on a Chinese theme. Edward H. Rust Nurseries, Los Angeles, reproduced a Chinatown garden, and the Coolidge Rare Plant Gardens, Pasadena, staged a remarkable collection of plants in an elaborate Chinese temple design. L. B. Merrick Nurseries, Whittier, contributed a garden shrine.

Rose displays were made by the Armstrong Nurseries, Ontario; Howard & Smith, Inc., Montebello, and California Roses, Inc., Puente.

Evans & Reeves Nurseries, Inc.,

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Write to us for our price list of Fruit Tree Seedlings and Shade and Flowering Trees.

A-No. 1 in grades and quality. Satisfaction guaranteed. Combination carloads to eastern points.

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Fruit and Shade trees with vigorous roots and sturdy stems.
Flowering trees, Weeping trees.
Shrubs, Roses, Small fruits.
Catalogue on request
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California Field-grown
ROSEBUSHES
Dependable
Howard Rose Co.
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Large quantities of fine lining-out stock in Conifers and Broadleaved Evergreens ready for shipment. If you have not received your copy of our 1942 Wholesale List, write for one today. Remember catalogue quotations include delivery to any point in the United States, no packing charge. 25% of purchase price reserves stock for future delivery.

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Who offers the nursery trade of this country the greatest line of rare trees and shrubs?

What is the only wholesale nursery list that shows the hardiness of each item?

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Our 1941-42 List of Lining-Out and Planting Sizes of Broad-Leaved and Conifer Evergreens is now ready-

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BIRCH, Cut-Leaf Weeping Schwedleri, Norway MAPLE
in carload lots. — Price list on request.
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Box 42, Orenco, Ore.

APPLE SEEDLINGS
CHINESE ELM SEEDLINGS
1 and 2-year.
Washington Nurseries
Toppenish, Wash.

Los Angeles, showed rare plants and trees, as well as unusual orchids. Roy F. Wilcox & Co., Montebello, exhibited palms and other foliage plants in a South Sea island setting.

CALL TO ORGANIZE IN SOUTHERN CALIFORNIA.

A call has gone out for nurserymen in southern California to meet at the Barker hotel, Los Angeles, November 20, at 7 p. m., to form the Southern California Nurserymen's Association.

Previously the nurserymen of the section had formed a group within the membership of the Southern California Horticultural Institute, but opinion has turned in favor of an independent organization, and some steps have already been made in that direction under Robert Gibbs as chairman and Opal Scarborough as secretary.

MISS SIZEMORE IS BRIDE.

Miss Ettarene Sizemore, daughter of Charles Sizemore, Louisiana, Mo., well known in the trade because of his long term of office formerly as secretary and now as traffic manager of the American Association of Nurserymen, was married October 25 to Clifford Marvin Atkinson, Jefferson City, Mo.

Mrs. Atkinson is a talented musician, having sung over the radio as a member of a girls' trio. She is a graduate of the local high school and attended William Woods College, Fulton.

Mr. Atkinson is the advertising manager of radio station KWOS, Jefferson City, where the couple will reside.

THE Quality Nursery, Allenwood, Pa., of which Ira H. Frontz is proprietor, has been awarded a government contract to supply and plant 6,000 shade trees and shrubs on the grounds of a defense housing project at Williamsport.

AT a dinner meeting of the Superior California Nurserymen's Association, at the Hotel Sacramento, Sacramento, November 5, Ferd Scheid, of the John Bruener Co., spoke on "What's Wrong with the Business Methods of the Average Nurseryman, as Seen by an Outsider?"

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Cutleaf Weeping Birch, Japanese Flowering Cherry, Flowering Crab, Chinese Elm, Laburnum Vossi, Paul's Scarlet Hawthorn, Norway and Schwedler Maple, Silver Maple, European Mountain Ash, Oriental Plane and Flowering Plum in variety.

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SHADE AND FLOWERING TREES
FRUIT TREE SEEDLINGS
FRUIT TREES
DECIDUOUS SHRUBS
VINES AND BULBS
PORTLAND ROSES

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FAIRVIEW, OREGON
Wholesale Only
GOOD WESTERN-GROWN NURSERY STOCK
Fruit Tree Seedlings
Flowering Ornamental Trees
Shade Trees
Roses
Grown right and packed right.
Combination carloads to Eastern distributing points will save you on freight.

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A. Miller & Sons, Incorporators
MILTON-*Since 1878*-OREGON
GENERAL NURSERY STOCK
Specializing in
Birches — Chinese Elms — Japanese and Weeping Cherries—Crab Apples —Hawthorns — Lilacs — Mountain Ash — Norway and Schwedler Maples —Flowering Plums.
Shade and Fruit Tree Seedlings
Send us your Want List. Our catalogue sent on request.
Combination carloads available to Eastern distributing points at minimum freight cost.

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Wholesale Rose Growers
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1941-42 List Now Ready and Will Be Sent on Request.

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Maples — Birch — Hawthorn — Chinese Elm—Bechtel's Crab—Flowering Cherry—Weeping Cherry—Weeping European Aspen—Laburnum Vossii —Laburnum Adami.
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WHOLESALE GROWERS
Fruit, Shade, Flowering Ornamental Trees, Fruit-tree Seedlings, Roses, Etc.
Very complete line of quality stock
Catalogue sent on request.

NO TURNPIKE PLANTING.

A $2,000,000 landscaping project for the Pennsylvania turnpike, superhighway linking Pittsburgh and Harrisburg, is reported to have bogged down because of a scarcity of available W. P. A. labor.

Recent reports at the state capital revealed that less than 300 men have been at work since last fall on this program for beautification and soil-erosion control, which originally was designed to provide employment to between 10,000 and 15,000 men at its peak.

The Pennsylvania turnpike commission had expected to work 2,000 men through the winter in preparation for spring planting.

State W. P. A. Administrator Col. Philip Matthews announced March 15 that W. P. A. would only be able to spare about 200 more workers, because of the state's reduced quota, which now stands at 125,000.

It was at first planned to establish work camps along the road to quarter men brought in from metropolitan areas. However, Washington headquarters ruled out the plan in order to keep W. P. A. workers as close to their homes as possible.

The 160-mile superhighway, bypassing all cities and towns, crosses comparatively unpopulated areas that are predominantly agricultural. This explains the lack of sufficient available labor along the line. Last month there were 200 men engaged in landscape work on the highway in Westmoreland county, sixty in Somerset and twenty-five in Bedford. None were working or available in Fulton, Franklin and Cumberland, the other three counties through which the highway passes.

As a result the commission's hopes for renewal of the boom period of prosperity enjoyed along the highway during the 2-year construction period have faded.

The project, as originally planned, called for planting about 2,000,000 trees and shrubs along the sides of the road, on slopes, cuts and fills, to serve a twofold purpose of beautification and erosion control.

No planting had yet been done at this writing. The work since last October has been confined to grading and cleanup activities. - B. J.

STRAWBERRIES IN OHIO.

Results of recent strawberry variety tests at the Ohio agricultural experiment station are reported in the bimonthly bulletin by Leon Havis, who concludes: "Premier (Howard 17) is still the standard commercial variety for Ohio. There seems to be no satisfactory late variety to follow Premier. Aberdeen is probably the best for this purpose, but is soft fleshed and very subject to decay. The outstanding new varieties for Ohio seem to be Catskill, Dresden and Northstar. These are worthy of trial by growers."

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Early-bearing pecan and fruit trees. Catalogue free. New crop pecans. BASS PECAN COMPANY, Lumberton, Miss.

VIBURNUM RHYTIDOPHYLLUM, 6 to 8 ins., transplanted, 20c; 8 to 10 ins., 25c. WAYNESBORO NURSERIES, Waynesboro, Va.

PEACH SEEDS. Big and mixed pits. $1.50 per bu., 3c per lb. NOBLE NURSERY, NOBLE, OKLA.

CEDAR SHINGLE TOW. Baled, in carlots, F. O. B. Virginia Mill, $7.00 per ton. WAYNESBORO NURSERIES, INC., Waynesboro, Va.

GRAFTED THOMAS BLACK WALNUT. Select Black Walnut and White Oak Seedlings. Write for prices. NUT TREE NURSERIES, John W. Hershey, Owner, Downingtown, Pa.

New crop Delphinium seeds, Giant Pacific hybrids, mixed colors, including Black Knight series or Lyondel Hybrids, Dr. Leonian's strain. Limited quantity, ¼ oz., $1.25; 1 oz., $4.00. S. J. Cook Nursery, R. 1, Dunkirk, N. Y.

BUXUS SEMPERVIRENS.

	Per 100
6 to 8 ins., 4 yrs., transpl., heavy	$12.00
8 to 10 ins., 5 yrs., transpl., heavy	20.00
10 to 12 ins., 6 yrs., transpl., heavy	25.00

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Write for our catalogued Price List. Nursery Stock for Fall Planting. Christmas Trees and Evergreen Decorations for the holidays. Reasonable prices, containers free. AMERICAN FORESTRY CO., Pembine, Wis.

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PACIFIC (Giant) HYBRIDS
Two-year-old—Transplanted—Now Ready
$10.00 per 100
C. K. GULDEMOND, GALESBURG, MICH.

Elæagnus; Gardenia florida, Gardenia Fortunei, Gardenia radicans; Waxleaf Ligustrums; Cornus florida; Cydonia japonica, cutting-grown. Persian Lilacs. Write for complete price list. TWITTY NURSERY CO., Texarkana, Tex.

SPECIMEN APPLE TREES. Grown for shade and ornamental purposes in assorted varieties. 7 to 8 ft., 1¼ to 1½-in. caliper, $7.50 per 10, $65.00 per 100; 1½ to 2-in. caliper, $10.00 per 10, $90.00 per 100. 4 to 5-in. caliper, B&B, trees quoted on request. WAYNESBORO NURSERIES, Waynesboro, Va.

NURSERY-GROWN DOGWOOD SEEDLINGS. Grades, 4 to 6, 6 to 12, 12 to 18 and 18 to 24 ins. Prices are very reasonable. NAUGHER NURSERY, CHASE, ALA.

25,000 Trees, Shrubs, Raspberries. 10,000 lbs. seeds: Ailanthus, 25c per lb.; Sycamore Platanus, 25c per lb.; Kentucky Coffee Bean, 35c per lb.; Regel Privet, also Amoor River North, 50c per lb. Schroeder Nursery Co., Granite City, Ill.

1500 VIBURNUM PRUNIFOLIA. 2 to 3 ft., $25.00; 3 to 4 ft., $35.00 per 100. Ribes alpinum, 24 to 30 ins., $35.00. European Mountain Ash, 6 to 8 ft., 75c; 8 to 10 ft., $1.00. All nice, well grown stock. Cash with order or references. ESCHRICH'S NURSERY, Sta. F, Milwaukee, Wis.

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Over 20 Selected Varieties.	Per 100
In 5 in. pans, 6 to 8 in. spread	$25.00
In 7 in. pans, 8 to 10 in. spread	55.00
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Exceptionally nice plants.
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For Fall 1941 per truck or car lots. The following balled and burlapped:

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Euonymus vegetus, 6 brchs. up, 15 to 18 ins.	$ 35.00
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Cornus florida rubra, 2 to 3 ft.	85.00
The following bare roots:	
Cercis canadensis, 5 to 6 ft.	40.00
Red double-flowering peach, 5 to 6 ft.	35.00
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Barberry Thunbergii, 18 to 24 ins.	12.00
Pachysandra, 2½-in. pots, 1-yr.	5.00
Pachysandra, 2½-in. pots, 2-yr.	8.00

Grafted Juniper on Red Cedar from 2½-in. pots for Spring 1942 delivery, ask for prices. NICK'S NURSERY, ANCHORAGE, KY. On U. S. 60, 15 miles east of Louisville.

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Lilium Candidum.
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SOUTHWESTERN NEWS.

The Conway Road Nursery Co., 10050 Conway road, St. Louis, Mo., is the name of a new nursery which has been established by Arthur C. Hiemenz and William G. Weld. They are operating a sales yard with a complete assortment of high-class nursery stock.

A sales yard has been started by the Howard Nursery & Floral Co., 1616 Washington, Amarillo, Tex.

The month of October broke all records for rainfall in several states in the southwest. J. Frank Sneed, Oklahoma City, Okla., says that the rivers were out of their banks in all directions from Oklahoma City, but that they are now falling fast. His nurseries there and at Muskogee were undamaged, and brisk business has begun.

Ben Davis, of the Ozark Nursery Co., Tahlequah, Okla., says it rained steadily for forty-eight hours the last of the month, about six inches.

A. L. Norton, Clarksville, Mo., reports that his locality got 14.5 inches of rain in October.

Pampa, Tex., had the most rain in October that it had received in forty years. Highways were blocked by high water all through the panhandle; then a blizzard covered it all with snow. Snow also fell in northern Kansas. Panhandle crops were practically a total failure because of too excessive moisture. No drought year caused a more complete crop failure.

In contrast, Henry N. Boyd, of the Boyd Nursery Co., McMinnville, Tenn., reports that in his part of the country October was hot and dry.

The government opened bids recently on defense housing projects at Fort Riley and Wichita, Kan., the former on October 31, the latter on November 3. No awards have been announced yet.

George Fisher, landscape gardener at the University of Kansas, is giving a series of talks on various phases of gardening over the university radio station, KFKU, Lawrence. This is part of a university-sponsored program entitled, "Speaking to Women." The programs scheduled for November are: November 12, "All-American Flower and Rose Selections," and November 26, "Hardiness and Win-

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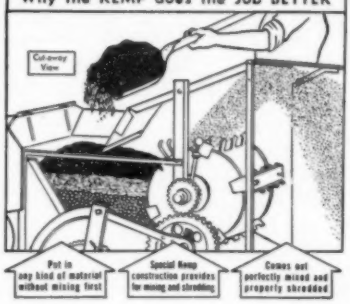
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You'll find a model (one of four priced from $75) that just suits your needs and the easy payment plan makes it so easy to own.

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YOU CAN—

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The easy-to-own KEMP shreds and mixes any combination of soils—sand, clay, peat, etc., quickly, in one operation, to just the texture you desire. This saves you up to 75% of hand labor costs and the resultant compost grows healthier, more salable plants.

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1941 crop available soon

Pseudotsuga Douglasii (E. Mont.)
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AROUND THE ROOTS it is far superior to the sphagnum moss commonly used for this purpose.

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Larvacide with Larvacide Fumigation of Potting and Seed Flat Soil. It's done right in bins, deep frames and compost piles. Also controls most nematodes and fungi that cause damping-off. Write

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ter Protection." Mr. Fisher says that, judging from the amount and quality of the fan mail he has received, the program is being well received.

Arthur S. Berger, Cleveland, O., will give two illustrated lectures at the University of Kansas on the afternoons of December 8 and 9. "Color in the Garden" and "Good Taste in Planting" are the titles. Mr. Berger is a graduate of the University of Kansas, holds his landscape architect's degree from Harvard University and studied in Europe.

The Missouri conservation commission and the agricultural extension service are coöperating in making available to Missouri farmers some 1,800,000 forest tree seedlings to be used in windbreaks, to halt erosion and to establish wood lots. L. E. McCormick, of the extension service, said that black locust, catalpa, black walnut, Osage orange, green ash, shortleaf pine, ponderosa pine and red cedar will be included. The seedlings will be provided to farmers at cost. County agents are taking orders now, but distribution will not be made until spring.

The engagement of Dan Carpenter, of the Pecos Valley Nursery, Roswell, N. M., to Miss Elissa Curb was announced November 2.

A news item from Emporia, Kan., states that the office of Mayor Ora Rindom's Riverside Gardens didn't smell like a bed of roses one morning recently. Opening a drawer of his desk, Mayor Rindom was startled to find a small skunk bedded down in some papers. Hauling out a 12-gauge shotgun, Mayor Rindom was preparing to exterminate the intruder when it beat him to the draw. While Mayor Rindom retreated, the skunk escaped through a hole in a partition. The skunk is believed to have entered the desk from an opening in the back. Mayor Rindom is the proprietor of the Riverside Gardens.

Leonard A. Keever, listed among the missing members of the destroyer Reuben James' crew, is the son of E. E. Keever, operator of a greenhouse at Little River, Kan. He was a machinist's mate and had served eighteen years in the navy during and after the first World war. He was retired five years ago, but rejoined the service last August. At that time he lived on a ranch near San Diego, Cal.

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POULTRY and AGRICULTURAL REQUIREMENTS

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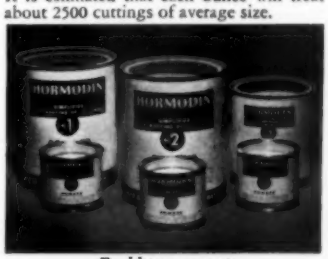

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MERCK & CO. Inc. *Manufacturing Chemists* RAHWAY, N. J.
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BIG MONEY IN LANDSCAPING— LEARN HOW!

Workers in nurseries can increase their earnings through study with the American Landscape School. Ambitious men are asking themselves, "What will I be doing a year from today?" They want to move on up. They want to increase their ability to serve the world more largely.

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These home lessons cover every problem of landscaping, and we help you with any difficulties that arise.

Investigate this opportunity. Course has been thoroughly tested. Start your upward climb today. Ten men in one nursery in Nebraska took the course—to their profit. Send a postal today for catalogue.

AMERICAN LANDSCAPE SCHOOL
6247 Grand Avenue
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ARIENS-Tiller
The American TILLAGE COMBINE
3 MODELS TO FIT EVERY NEED

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BE MODERN!

If you are going to the tenth floor of an office building, don't walk up the stairs—take the elevator!

If you want to talk to a friend, don't rush clear across town—call him on the telephone.

If you have stock to sell to nurserymen, use the quickest and easiest method—tell what you have, and the price, to 4500 trade buyers through the advertising columns of the American Nurseryman.

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AMERICAN NURSERYMAN
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SALE OF SPECIMEN TREES

Ground clearing sale of large stock of fine New England grown material. All plants dug B.&B., f.o.b. the Nurseries. Your inquiries and examination are invited. Varieties with * are priced in the ground—dig your own. Ask about other savings by digging your own.

ABIES CONCOLOR

12 to 14 ft.	$18.00
14 to 16 ft.	21.00
16 to 18 ft.	27.00
18 to 20 ft.	36.00
20 to 25 ft.	45.00
30 to 35 ft.	*60.00

PICEA CANADENSIS

10 to 12 ft.	12.00
12 to 14 ft.	15.00
14 to 16 ft.	18.00
16 to 18 ft.	20.00
18 to 20 ft.	30.00
20 to 25 ft.	40.00
25 to 30 ft.	*50.00

PICEA ENGELMANNI

6 to 7 ft.	5.00
7 to 8 ft.	6.50
8 to 9 ft.	8.50
9 to 10 ft.	10.00
10 to 12 ft.	12.00
12 to 14 ft.	15.00
14 to 16 ft.	20.00
16 to 18 ft.	27.00

PICEA PUNGENS

3 to 4 ft.	2.00
4 to 5 ft.	2.50
5 to 6 ft.	3.50
6 to 7 ft.	4.50
7 to 8 ft.	6.50
8 to 9 ft.	9.50
9 to 10 ft.	12.00
10 to 12 ft.	15.00
12 to 14 ft.	18.00
14 to 16 ft.	24.00
16 to 18 ft.	30.00

PICEA PUNGENS GLAUCA

3 to 4 ft.	2.75
4 to 5 ft.	4.00
5 to 6 ft.	6.00
6 to 7 ft.	7.75
7 to 8 ft.	10.00
8 to 9 ft.	12.00
9 to 10 ft.	15.50
10 to 12 ft.	20.00
12 to 14 ft.	27.00
14 to 16 ft.	33.00
16 to 18 ft.	47.00
18 to 20 ft.	57.00
20 to 25 ft.	68.00

PSEUDOTSUGA DOUGLASI

10 to 12 ft.	12.00
12 to 14 ft.	15.00
14 to 16 ft.	18.00
16 to 18 ft.	24.00
18 to 20 ft.	30.00
20 to 25 ft.	40.00
25 to 30 ft.	*50.00

JUNIPERUS CHINENSIS

5 to 6 ft.	$4.00
6 to 7 ft.	5.00

JUNIPERUS VIRGINIANA

10 to 12 ft.	9.00
12 to 14 ft.	12.00
14 to 16 ft.	14.00
16 to 18 ft.	18.00
18 to 20 ft.	20.00

PINUS RESINOSA

16 to 18 ft.	22.00
18 to 20 ft.	27.00
20 to 25 ft.	34.00
25 to 30 ft.	43.00
30 to 35 ft.	55.00

PINUS STROBUS

14 to 16 ft.	20.00
16 to 18 ft.	27.00
18 to 20 ft.	34.00
20 to 25 ft.	40.00
25 to 30 ft.	47.00
30 to 35 ft.	*60.00

THUJA OCCIDENTALIS

8 to 10 ft.	6.00
10 to 12 ft.	9.00
12 to 14 ft.	12.00
14 to 16 ft.	15.00
16 to 18 ft.	18.00
18 to 20 ft.	27.00
20 to 25 ft.	36.00

TSUGA CANADENSIS

9 to 10 ft.	16.00
10 to 12 ft.	20.00
12 to 14 ft.	27.00
14 to 16 ft.	35.00
16 to 18 ft.	40.00
18 to 20 ft.	47.00
20 to 25 ft.	65.00
25 to 30 ft.	*80.00
30 to 35 ft.	*90.00

ACER DASYCARPUM

4 to 5-in. cal.	17.00
5 to 6-in. cal.	21.00
6 to 7-in. cal.	27.00
7 to 8-in. cal.	37.00
9 to 10-in. cal.	47.00
10 to 12-in. cal.	*60.00
12 to 14-in. cal.	*100.00
15 to 16-in. cal.	*125.00

ACER PLATANOIDES

2 to 2½-in. cal.	$ 6.00
2½ to 3 -in. cal.	8.00
3 to 3½-in. cal.	12.00
3½ to 4 -in. cal.	15.00
4 to 5 -in. cal.	20.00
5 to 6 -in. cal.	35.00
6 to 7 -in. cal.	45.00
7 to 8 -in. cal.	55.00
8 to 9 -in. cal.	65.00
9 to 10 -in. cal.	*75.00

ACER RUBRUM

2½ to 3 -in. cal.	8.00
3 to 3½-in. cal.	12.00
3½ to 4 -in. cal.	15.00
4 to 5 -in. cal.	25.00
5 to 6 -in. cal.	30.00
6 to 7 -in. cal.	45.00
7 to 8 -in. cal.	55.00
9 to 10 -in. cal.	*85.00

ACER SACCHARUM

2 to 2½-in. cal.	6.00
2½ to 3 -in. cal.	8.00
3 to 3½-in. cal.	12.00
3½ to 4 -in. cal.	16.00
4 to 5 -in. cal.	22.00
5 to 6 -in. cal.	30.00
6 to 7 -in. cal.	45.00

BETULA

Splendid selection for spring 1942 planting. Ask about varieties and sizes available.

FAGUS SYLVATICA

7 to 8-in. cal.	*75.00
8 to 10-in. cal.	*100.00

FRAXINUS AMERICANA

2 to 2½-in. cal.	5.00
2½ to 3 -in. cal.	6.00
3 to 4 -in. cal.	10.00
4 to 5 -in. cal.	17.00
9 to 10 -in. cal.	*65.00
12 to 15 -in. cal.	*90.00

OSTRYA VIRGINIANA

4 to 5-in. cal.	17.00

QUERCUS ALBA

2 to 2½-in. cal.	8.00
2½ to 3 -in. cal.	9.50
7 to 8 -in. cal.	*35.00

QUERCUS BICOLOR

2 to 2½-in. cal.	7.00
2½ to 3 -in. cal.	8.00
3 to 3½-in. cal.	12.00
3½ to 4 -in. cal.	17.00
4 to 5 -in. cal.	27.00
5 to 6 -in. cal.	35.00

QUERCUS COCCINEA

7 to 8-in. cal.	*$75.00
8 to 9-in. cal.	*100.00
11 to 12-in. cal.	*125.00

QUERCUS MACROCARPA

3 to 4-in. cal.	12.00
4 to 5-in. cal.	17.00
5 to 6-in. cal.	30.00

QUERCUS PALUSTRIS

2½ to 3 -in. cal.	12.00
3 to 3½-in. cal.	15.00
3½ to 4 -in. cal.	20.00
4 to 5 -in. cal.	25.00
5 to 6 -in. cal.	33.00
6 to 7 -in. cal.	45.00
7 to 8 -in. cal.	*60.00
9 to 10 -in. cal.	*90.00
15 to 16 -in. cal.	*100.00

QUERCUS RUBRA

1½ to 2 -in. cal.	6.00
2 to 2½-in. cal.	7.50
2½ to 3 -in. cal.	10.00
3 to 3½-in. cal.	13.00
3½ to 4 -in. cal.	20.00
4 to 5 -in .cal.	30.00
5 to 6 -in. cal.	40.00
6 to 7 -in. cal.	55.00
7 to 8 -in. cal.	*70.00

TILIA AMERICANA

3 to 3½-in. cal.	12.00
3½ to 4 -in. cal.	17.00
4 to 5 -in. cal.	25.00
5 to 6 -in. cal.	30.00
6 to 7 -in. cal.	40.00
7 to 8 -in. cal.	50.00
8 to 9 -in. cal.	60.00

TILIA CORDATA

2 to 2½-in. cal.	10.00
2½ to 3 -in. cal.	14.00
3 to 3½-in. cal.	18.00
3½ to 4 -in. cal.	23.00
4 to 4½-in. cal.	28.00
4½ to 5 -in. cal.	33.00
5 to 6 -in. cal.	40.00
6 to 7 -in. cal.	50.00
7 to 8 -in. cal.	65.00
9 to 10 -in. cal.	*90.00
10 to 12 -in. cal.	*115.00
12 to 15 -in. cal.	*130.00

ULMUS AMERICANA

4 to 5-in. cal.	23.00
5 to 6-in. cal.	30.00
6 to 7-in. cal.	40.00
7 to 8-in. cal.	50.00
8 to 10-in. cal.	65.00
10 to 12-in. cal.	*85.00
12 to 14-in. cal.	*100.00

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FRAMINGHAM CENTRE, MASSACHUSETTS

Pleasant Street **ROUTE 30**

(Refer to this advertisement for future orders, or send to us for another copy.)